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It is our aim, our ambition, our aspiration even, to build our journal worthily and well, not for the hour only, but for future years; for the few men in the forefront of an enduring and a laborious art; for the disciplined ranks of a distinguished profession; for the young men—Architects to be—and for all who love a clustered column or a flying buttress, a traceried window or a Greek frieze; for the man, too, who honestly plumbs a jamb.

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XII.—Royal Hospital for Sick Children,
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XIII.—Union Station, Toronto (Ross
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XIV.—XVII.—Munster and Leinster
Bank, Cork (Arthur and Henry H.
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XVIII., XIX.—Hazlitt House, South-
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XX.—Extension to the Institute, Hamp-
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XXI.—St. Wilfrid's, Harrogate: In-
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XXII.—Empire House, India House,
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XXIII.—Canada House, Kingsway (Tre-
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XXIV.—York House and Alexandra
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XXV.—St. Wilfrid's Church, Harro-
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XXVI.—XXIX.—Bath Improvement
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XXX.—Alterations to No. 61, Bruns-
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XXXI.—Design for Civic Centre,
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XXXII.—Housing and Town Planning
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XXXIII.—Housing and Town Planning
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XXXIV.—Drogheda Court, London, W.:
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XXXV., XXXVI.—Moorgate Hall, Fins-
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XXXIX., XL.—Home Office Industrial
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XLI.—New Building for Alex. Stephen
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XLVII.—Plaster Casts of "Georgian"
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XLVIII.—Spanish Ironwork: Gilt Re-
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I.—French Panel (Gilt) in Victoria and
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II.—Sculpture in Garden Court of
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III.—Carved Enrichments on Mantel-
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- IV.—Enrichment Around Mirror at Sherborne House, Gloucestershire, March 22.
 V.—Entrance Gates, Burghley House, Northamptonshire, April 5.
 VI.—Carved Enrichment of Stone Plinth, Church of St. John Lateran, Rome (Alessandro Galilei), April 12.
 VII.—Carved Wood Terminal to Doorcase, Woodcote Park, Epsom, April 26.
 VIII.—Carving on Screen in Memorial Hall, Eton (Laurence K. Hall, F.R.I.B.A.), and Sidney K. Greenslade, A.R.I.B.A.), May 3.
 IX.—Plasterwork in Dining-room, Minsted, Midhurst, Sussex (Mervyn Macartney, F.R.I.B.A., Architect; George Jack, Craftsman), May 24.
 X.—Plasterwork at Barnstaple. Detail of Ceiling in Chapel, Penrose Almshouses, and Detail of Ceiling, House in Cross Street, June 21.
 XI.—Marble Inlay from Hadrian's Villa, Tivoli, Rome (now in the Soane Museum, London), June 8.

DOORS AND DOORCASES—

- I.—At 26, Hatton Garden, London, E.C., April 26.
 II.—At Harewood House, Hanover Square, London (Robert Adam), May 3.
 III.—Doorway, No. 12, Pottergate Street, Norwich (Measured by A. O. Collard, Drawn by Joseph Seddon), May 10.
 IV.—In a House on the Heerengracht, Amsterdam, May 24.
 V.—House of the Dutch Embassy, Rue Vieille du Temple, Paris, June 7.

ENGLISH INTERIORS—

- I.—Staircase of York House, Pall Mall, London (now demolished) (Brettingham), Feb. 16.
 II.—Wentworth Woodhouse, Rotherham: The Saloon (John Carr), March 1.
 III.—The Great Hall, Penshurst, Kent, March 15.
 IV.—The Great Hall, Kedleston, Derby (Robert Adam), March 22.
 V.—Stoke Edith, Herefordshire: Grand Staircase, March 29.
 VI.—The Dining-room at Holme Lacy, Herefordshire, May 31.
 VII.—Staircase Hall, Ely House, Dover Street, London, W., June 7.

LONDON FACADES—

- VI.—No. 20, St. James's Square (Robert Adam), Jan. 19.
 VII.—Craig's Court House, Charing Cross, Jan. 26.
 VIII.—Phoenix Assurance Building, Charing Cross, London (J. M. Gandy, Architect; Drawn by W. J. Roberts, M.A., A.R.I.B.A.), May 24.
 IX.—Nos. 57 and 58, Lincoln's Inn Fields, June 14.
 X.—Lindsey House, Lincoln's Inn Fields (Attributed to Inigo Jones), June 21.
 XI.—No. 29, Dover Street, W. (John Nash), June 28.

MODERN AMERICAN ARCHITECTURE—

- XXIX.—Library, University of Texas (Cass Gilbert), Jan. 5.

- XXX.—XXXIII.—Boatmen's Bank Building, St. Louis (Eames and Young), Feb. 2.
 XXXIV.—Children's Hospital, Boston, Mass. (Shepley, Rutan, and Coolidge), Feb. 16.
 XXXV.—Two Houses on East 80th Street, New York (Delano and Aldrich), March 1.
 XXXVI.—XXXIX.—Temple of the Scottish Rite, Washington (John Russell Pope), March 8.
 XL.—XLI.—Municipal Building, Hartford, Connecticut (Davis and Brooks), April 5.
 XLII.—XLIII.—New Hampshire Fire Insurance Building, Manchester, N.H. (E. L. Tilton), April 12.
 XLIV.—West Park Presbyterian Church, New York (Carrère and Hastings), April 26.
 XLV.—House at South Orange, N.J. (Davis, McGrath and Kiessling), May 3.
 XLVI.—XLVIII.—Museum of Fine Arts, Boston, Mass.: New Galleries for Paintings (Guy Lowell), May 10.
 XLIX.—Chimney-piece in Mayor's Reception-room, Municipal Building, Hartford, Connecticut (Davis and Brooks), May 17.
 L.—Doorway, Administration Building, Cleveland, Ohio (Wallis and Goodwillie), May 31.

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- I.—Doorway of Engineering Building, Cleveland, Ohio (Wallis and Goodwillie, Architects; Drawn by Walter McQuade), June 14.

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- XXVII.—Keldy Castle, Yorkshire (John Bilson, F.S.A., F.R.I.B.A.), Jan. 26.
 XXVIII.—Fannams Hall, Ware: The Great Hall (W. Wood Bethell), Feb. 9.
 XXIX.—XXX.—Summerhill Court, Kingswinford (James A. Swan, F.R.I.B.A.), Feb. 16.
 XXXI.—"Howbury," St. Andrews: Entrance Front (Mills and Shepherd), March 1.
 XXXII.—Two Chimney-pieces. (H. Bulkeley Creswell, F.R.I.B.A.), April 19.
 XXXIII.—XXXIV.—"Idsworth House," Horndean, Hampshire: New Drawing-room. (H. S. Goodhart-Rendel), April 19.
 XXXIII.*—Entrance Gates, Newton St. Loc, Bristol (Henry Williams), May 3.
 XXXIV.*—Cresting to Entrance Gates, Newton St. Loc, Bristol (Henry Williams), May 3.
 XXXV.—Gate at Chislehurst, Kent (E. J. May, F.R.I.B.A.), May 10.
 XXXVI.—Chimney-piece in Hall, Kensington Palace Gardens, W. (E. J. May, F.R.I.B.A.), June 21.

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- XLII.—Farnese Palace, Rome: Detail of Entrance (Doorway by Sangallo, Window by Michelangelo), Jan. 26.
 XLIII.—The Sorbonne, Paris: Detail of Facade (Nénot), Feb. 2.
 XLIV.—Galerie des Glaces, Versailles (Mansart, Architect; Ceiling Paintings by Lebrun), March 15.

- XLV.—The Theatre, Versailles (Jules Mansart), March 22.
 XLVI.—The Gallery of Battles, Versailles (Jules Mansart), April 5.
 XLVII.—Vestibule of the Chapel, Versailles (Jules Mansart), April 19.
 XLVIII.—Temple of Apollo, Greece: Detail of Order, May 10.
 XLIX.—The Post Office, Dublin (Francis Johnston (From an Engraving of a Drawing by Geo. Petrie, R.H.A.), May 10.

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- VIII.—Design for Monument to Captain Henry White (Habib Basta, A.R.I.B.A.), Jan. 5.
 IX.—Monument to Bernardo Guigni in the Church of the Badia, Florence (Mino da Fiesole), Jan. 19.
 X.—Monument to Marshal Moncey, Place de Clichy, Paris (Guillaume, Architect; Doublemard, Sculptor), Jan. 26.
 XI.—XII.—Wall Monument to Lieut. George Lawrence Harford, in Mossley Hill Parish Church, Liverpool (G. H. Tyson Smith), Feb. 9.
 XIII.—Monument to C. L. Scipio in the Vatican Museum, Rome, Feb. 23.
 XIV.—Wall Monument to St. Ignatius, in the Church dedicated to him at Rome (Alessandro Algardi), April 12.
 XV.—Monument to Combatants of 1870 at Angoulême, France, April 12.
 XVI.—Monument to Combatants of Franco-Prussian War, 1870-1, at Caen (Auguste Nicolas), April 19.
 XVII.—Monument to Budd Family in Churchyard of St. Matthew's, Brixton, London, S.W., April 26.
 XVIII.—Molière Fountain, Paris (Visconti, Architect; Pradier, Sculptor), May 24.
 XIX.—Monument to Bishop Federighi in the Church of the Sacred Trinity, Florence (Luci della Robbia), June 17.

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- XIX., XX.—Hôtel Portalles, Paris (J. F. Duban), Feb. 9.

SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.)—

- XVI., XVII.—Ashley House, Epsom, Jan. 5.
 XVIII.—Drayton House, St. Margaret's, Middlesex, Jan. 12.
 XIX.—The Elms, Epsom, Jan. 26.
 XX., XXI.—Brown House, Reigate, Feb. 2 and Feb. 9.
 XXII.—Thorncroft Manor, Leatherhead, Surrey (Sir Robert Taylor), Feb. 16.
 XXIII.—Some Weatherboarded Cottages: Pond Lane, Lower Clapton; At Merton, Surrey, Feb. 23.
 XXIV.—House at Mitcham and House at Hampstead, March 1.
 XXV.—House on Holywell Hill, St. Albans, March 8.
 XXVI.—Shop at Dorking, Surrey, March 15.
 XXVII., XXVIII.—The Paragon, Blackheath, March 22.
 XXIX.—Two Doorways, High Street, Marlow, and St. Peter's Street, St. Albans, April 5.
 XXX.—Doctor's House, New Cross, London, S.E., April 12.
 XXXI.—At St. Margaret's, Middlesex; at St. Albans, April 19.
 XXXII.—Cedar Lodge, Blackheath, London, S.E.; Office, Bury Street, Bloomsbury, London, W., April 26.

- XXXIII.—Hainaker Lodge, Coldharbour Lane, Brixton, London, S.W., May 3.
 XXXIV.—Porch, Stone House, Lewisham, London, S.E., May 17.
 XXXV.—Stone House, Lewisham, London, S.E.; The Grange, St. Peter's Street, St. Albans, May 24.
 XXXVI.—Porch, Blackheath Hill, London, S.E., May 31.
 XXXVII.—Treliwick House, near Falmouth, Cornwall (P. F. Robinson), June 14.

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- XI., XII.—Free Trade Hall, Manchester (Measured and Drawn by Gordon Hemm), Jan. 5 and Feb. 16.
 XIII.—Design for a School Chapel (Martin J. Slater), Feb. 23.
 XIV.—Design for Facade for an Art Dealer (Sidney C. Foulkes), March 1.
 XV.—Cross Street Chapel, Manchester (erected 1694), March 22.
 XVI.—Detail of Capital and Base from the Arc de Triomphe du Carrousel, Paris (Percier and Fontaine, Architects; Measured and Drawn by F. Jenkins), March 29.
 XVII.—Free Trade Hall, Manchester: Detail of Gallery Front (Measured and Drawn by Gordon Hemm), March 29.
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 XIX., XX.—St. George's Hall, Liverpool (Measured and Drawn by E. N. Frankland-Bell), April 12 and April 19.
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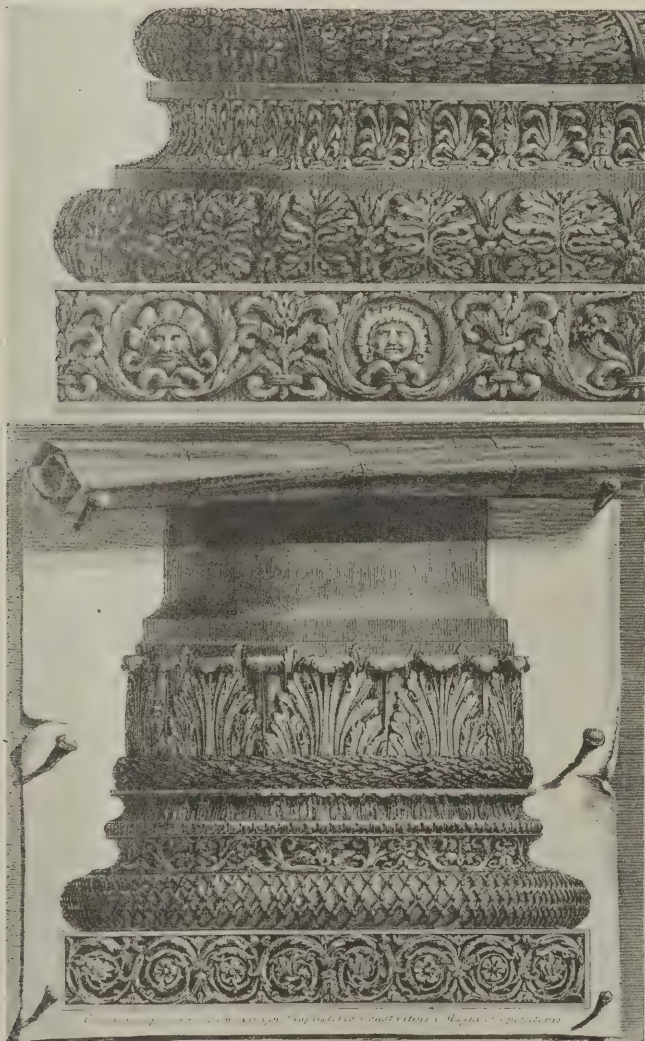


THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, January 5, 1916.

Volume XLIII. No. 1096.

No. 168.



COLUMN BASES FROM THE CHURCH OF ST. PAUL AND THE BAPTISTERY OF CONSTANTINE, ROME.

(From Piranesi.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

JANUARY 5, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1096.

EDITORIAL.

AT the beginning of a New Year—may it bring us complete triumph over our enemies, and all the blessings of a peace secured upon our own terms!—it is natural not only to make new resolves, but, “looking before and after,” as Shelley puts it, to take thought as to ways and means of giving them practical effect. To point to Germany as being in any way an exemplar of polity and reform would just now be to excite disgust and contempt; and the youngest second-lieutenant, fresh from school, has already forgotten how to construe the venerable tag *Fas est ab hoste doceri*. Nevertheless, it would be folly to be contemptuous to our own hurt; and, in order to beat the Germans in the markets of the world, it is mere prudence to take careful note of the means by which Germany has made such phenomenal progress in commerce. “Efficiency” is the keynote. As a writer in “The Times” has said, “German absolutism is not that of a prodigal sovereign, but of a terribly efficient State. The Empire is bent on method and economy; it is all arranged so that no ounce of resources and no unit of man-power can be squandered.”

It is probable that after the war the energies hitherto excessively devoted to militarism will be largely devoted to a tremendous effort to retrieve in commerce the losses sustained in war; and the moral for us is that we must rise to the civil as we have risen to the military occasion. German commercial practices are often, as we have previously stated, as unscrupulous as the Hunnish methods of warfare. These very persevering people remorselessly sweep aside everything that stands between them and their immediate object. As in the field of war, so in that of commerce, they put much faith in the “massed formation” method of attack. As Sir William Ramsay has shown, they have in this way sapped and destroyed several British industries. By pooling their resources—often with State or municipal assistance—they have succeeded in destroying British firms that could not sustain the fight unaided. Everywhere they have planted their commercial spies. It was not for nothing that, a few years back, Britain was overrun with cheap, obliging, and efficient German clerks, who came here ostensibly to perfect themselves in the English language, and who commonly took away with them large samples of it in the form of the names and addresses of the most profitable customers of the firms for whom they worked with such diligence and devotion that the thoroughly befooled employers flooded the newspapers with their praises.

It is not in these nefarious ways that we should wish to imitate the Germans; nor shall we stoop to

their habits of falsifying trade-marks and pirating inventions. But our educational and business organisation might be greatly improved all round—not exactly on German lines, but still with the determined object of wasting “no ounce of resources and no unit of man-power.” Elementary, higher, and professional education must be remodelled on more businesslike lines. More men of commercial knowledge and acumen should be appointed to foreign consulships, and required to act rather as commercial outposts than as exponents of an effete and abstract diplomatism. Nor should it be overlooked that the Germans are tremendous advertisers. Every industry and profession has its technical organ, and every technical or commercial journal is replete with advertisements. To do them justice, the Germans know well the difference between true and false economy, and are quite alive to the remunerative value of publicity. Sea-power has given us an enormous temporary advantage over the enemy in the matter of commerce; it remains for our traders to take every possible legitimate means of maintaining and increasing that advantage. For it is upon this foundation that professional prosperity, our pre-eminence in the arts and sciences, and our very existence as a nation, must ultimately rest.

With native grace and urbanity, Mr. Ernest Newton has sent forth, in the name of the R.I.B.A., a seasonable word to architects on service—“a message of affectionate greeting to all architects serving with the colours.” “We want them to know,” he says, “that we are proud of them, and that they are always remembered.” They have good reason to know it already, but they will be none the less glad of the assurance. There follows a simple but touching tribute to the fallen: “I should like, too, to assure the parents of those who have fallen of our deepest sympathy. They have the consolation of knowing that these promising young lives have been sacrificed in performing the noblest duty which a man can be called upon to perform; and, although we know that their grief is incurable, we hope that their legitimate pride and the knowledge that the memory of their dear ones is enshrined in the hearts of their fellows will, in time, be a solace to them.” To this we say, with bowed heads, and from our innermost hearts, Amen.

Three of the subjects set as alternative problems in design for the R.I.B.A. Final examinations are judiciously topical. One is a roll of honour—a monumental tablet for a church, to commemorate parishioners, male and female, who have given their lives for their country. As this is work into which architects can put heart and feeling, as well as

artistic skill (which, indeed, lacking this inner impulse, is but a dead issue), we shall expect to see excellent sympathetic work in section (a) Subject XXVI. Section (b), a cottage hospital for both sexes, to accommodate twenty patients, is hardly less timely, as it bears, at least indirectly, on conditions created by the war. A town house in a terrace, and a small warehouse in the City of London, set down as the two sections of Subject XXVII., are also suggestive of war effects. As the town house is to be only 25 ft. from centre to centre of party walls, and as its cost is not to exceed £4,000, the resultant designs will serve to show whether or not young architects will have been able to rid themselves of grandiose ideas about town houses and super-wealthy clients. One may reasonably anticipate that in the near future there will be many more town houses, and that they will be much smaller than heretofore. Here, then, is a splendid opportunity to evolve a new type of dwelling for the reduced rich. As to the small warehouse, we have some doubt as to its relevancy. Although it seems certain that there will be a demand for smaller dwellings, one would like to believe that larger warehouses will be required, to keep pace with the confidently anticipated expansion of trade. But this warehouse is to be in the City of London, and would perhaps be sufficiently large for the stocking of samples, and for the fulfilling of local or minor orders. City sites are too precious to be devoted to mere storage.

* * * *

What Mr. George A. Macmillan, hon. sec. of the Society of Dilettanti, calls a "romance of publishing" — or perhaps some member of the intensely romantic race of sub-editors supplied the heading to Mr. Macmillan's letter to the Press — hardly deserves so high-sounding a description, since the gist of the matter is just a tardily discovered oversight. It will be remembered that in 1913 the Dilettanti Society generously presented to the R.I.B.A. a fine series of plates and drawings. When these were exhibited, Professor W. R. Lethaby, on collating them with the four published volumes of "Antiquities of Ionia," made the interesting discovery that the plates in question, although engraved apparently as long ago as 1830, had never been published. Mr. Macmillan supplies a very probable explanation of this strange oversight. William Wilkins, R.A., who had been the architectural expert of the Society, and was editing the volumes of Ionian antiquities, died in 1839, before completing his task, and these particular prints were put aside and forgotten. As the plates from which the impressions were taken have been found in perfect condition in the hands of the printers, the long-delayed publication of the prints was determined upon, and, appropriately enough in every way, Professor Lethaby was invited to edit the volume. This almost amounts to poetic justice; but while the incident is extremely interesting, we must decline to regard it as converting either the Society's offices or No. 9, Conduit Street, into an abode of romance. Professor Lethaby, however, is to be congratulated on having found so congenial a task, and the Society on getting exactly the right man to perform it.

* * * *

It is stated that the volume—which shall cost you no more than a poor three guineas if you subscribe in advance—deals with the great temple of Artemis at Magnesia, "one of the most famous examples of Hellenistic architecture," and with the remarkable monuments of Myra and other Lycian cities. It contains forty-six steel plates, which are described as excellent examples of an art that has almost

ceased to exist. They were made at a time when steel engraving had reached its zenith. Its decay has been rather a misfortune for architecture, because the steel plate, take it for all in all, was, we think, incomparably the best medium of reproduction for architectural subjects, its very rigidity and sharpness making it almost ideal for the expression of architectural straight lines and contours. This fact was fully recognised by the engravers of the masterly little plates that adorned the "Amulets," "Keepsakes," and other tiny annual volumes which our grandsires presented to their sweethearts on New Year's Day; for many of these miniatures show a more or less fantastically conceived pseudo-classic temple or some Hellenistic fragment based upon the plates by Stuart and Revett.

* * * *

An instance of the independent spirit which seems to be peculiar to the British race has arisen in the case of the Colonial buildings in Aldwych. It was hoped that the agencies of the various States of the Australian Commonwealth would be housed in one large pile of buildings, but at present only the State of Victoria has definitely agreed to come into the block that is being reared at the Strand corner of Aldwych. Each of the other States, it is said in the racy vernacular of the Commonwealth, "prefers to run a show of its own." This, in its way, is an admirable characteristic, but unfortunately it illustrates what may be regarded as a defect of an excellent quality. Between these States there is a good-tempered rivalry in the bid for capital, for trade, and for emigrants, and in these matters they are as keen in outvying each other as they are in emulation on the field of battle whither the old flag calls them. The one action is a kind of diversity in unity, the other a kind of unity in diversity, that no foreigner can understand. It is beautiful; but is it businesslike? It is the same tendency that prevails among British traders, who, however, will have to overcome it if they are to compete successfully against the more economically consolidated forces of foreign competition. If our Colonial kinsmen could only have brought themselves into agreement on the subject, they might, between them, have reared the finest building in London.

* * * *

Canon Alexander, preaching at St. Peter's, Cranley Gardens, on behalf of the St. Paul's Cathedral Preservation Fund (and thus resuscitating the ancient joke about "robbing Peter to pay Paul"), made out, if the reporter is to be believed, that St. Paul's is perishing from senile decay. To follow up in similar vein this suggestion of morbid pathology, one may say that as a man is as old as his arteries, so St. Paul's, though a mere infant in point of the days of its years, is as old as the iron that is rusting within it. If concrete had been available to Sir Christopher Wren, he would have encased his ironwork in it, and, so far as the metal is concerned, St. Paul's would to-day have been sound as a bell—an unfortunate simile, perhaps, seeing how many big bells crack. But there are other troubles: "the vast and imperfectly distributed weight of the dome falling on its massive piers had produced the present problem." Here, again, concrete would have prevented the mischief. Wren, the Canon seems to think, was too greatly daring in "building as and where he did"; but, in justice to the architect, it should be remembered that, with all his prescience, it was impossible for him to foresee that subterranean delvings for sewers, railways, and what not, would rob the "pot-earth" of its stability, and drain the subsoil until it crumbled. About £70,000 is required for absolutely necessary works to the fabric. Half of this sum has been raised; and, even in war time, there should be no great difficulty in getting the remainder; St. Paul's being itself a national asset.

HERE AND THERE.

THERE are some things established by custom which, willy nilly, we must be at pains to observe. An archbishop may wonder why he is called upon to wear an apron, and the London fishmonger, musing awhile, may ponder on the fates that give him a straw hat in winter time. But these are things immutable, pertaining to the mystery of life. So, too, every self-respecting writer, in the very newest week of a new year, must observe custom, and draw a picture from the past and add a hope for the future. Here, then, is the pensive architect on the threshold of a New Year. 1915 does not live in his memory as a good twelve months, but he accepts the present year of grace with as high a hope as may be, for surely when the War comes to an end there will be plenty of work for him to do. Sitting in his office, he smokes and thinks. That municipal building he won in competition, now, alas, held up, will be started forthwith, and Mr. —'s new house will be put in hand, and the extension of Messrs. —'s premises will certainly be wanted at the earliest possible moment, and —. But he looks about him. He is in sole possession of the office. The boys have gone to the War, and the dust lies thick on the rolls of drawings on the shelf. But, hark, there's a knock. A new client perhaps. Blessing be on his head, first of the New Year, and harbinger of the better times to come. Yet it is but the postman, with a sallow-looking envelope in his hand. The Income Tax! The reply of the Chancellor of the Exchequer to the R.I.B.A. is frightfully true then—"it would not be practicable to draw distinctions between the various classes of businesses which in different ways have especially suffered from the War, or to say how far the income of one or another had been directly affected by Governmental action. Individual cases of special hardship cannot be provided for by legislation, and it is suggested that as and when they arise they should be brought to the notice of the Board of Inland Revenue with a view to any such postponement of payment as in the circumstances it may seem fit to allow by administrative action." The architect shuts the door. He is determined now, if he can possibly manage it, that the permanent residence of every Chancellor of the Exchequer shall be one where the flues won't draw, where strong draughts rage between all windows and doors, where the boiler bursts, and tremendous patches of damp come out everlastingly on every wall. Gilbert was, indeed, magnificently right: "The punishment must fit the crime."

* * * * *

"What I have said, I have said," is an utterance for the bold man only. I, at any rate, should hesitate to say as much for my own assertions. Our opinions change with the years, and things about which we once held strong views are now regarded with tolerance, if not with unconcern. I once took the trouble to put side by side what Ruskin as an old man said of some of the dogmatic writings of Ruskin as a younger man, and very caustic were the comments of age. But there were things which the old man still commended as essentially true, and found satisfaction in. And I have something of the same sort of feeling in coming across a description of "Acacia Villa" which I wrote many years ago—that "Acacia Villa" of the suburbs which though still with us, is, I am glad to think, passing away with the aftermath of Victorian taste that gave it being. The visit was one of inspection for the satirist—rather an unfriendly critic I fear, with an eager eye for all shams, and a tendency to point the moral. We must wait a little at the front door, he said, for the electric bell is out of order, and while we wait there is subject for contemplation in the doormat—that at least is not a sham (which is generally the case with those things we consider beneath our notice). We may perhaps remember that, after all, shams are as old as the hills: the Mycenæans used to grain their walls sometimes and

paint clay vases to look like brass ones, and long before that (B.C. 4750) Queen Mena wore a false fringe. This, however, by the way. To pass into the house. The hall turns out to be quite a small place, lighted through panes of the most vivid red and blue glass, and there is paper on the walls which sets one thinking of the perverseness of modern taste. It seems that no new material shall stand on its merits. Here is paper with a pattern of squares presuming to be mosaic work—accurate, without a doubt, and real mosaic work might perhaps look no better; but what a difference in the materials—mosaic, a slow building-up on a soft ground with scraps of marble or glass or anything suitable; paper, produced and printed in long lengths, where the designer has a free will to sweep with his pencil or brush. Both methods have their own qualities, and let history not be forgotten that when the art of mosaic was made to imitate picture painting it died. The floor of the hall, and of the narrow passage beyond, is paved with tiles, if not beautiful, at least genuine and well laid. We cannot go far, however, without being confronted with a hat-stand, a very elaborate affair in walnut—that is to say, the parts usually seen are of walnut, but if one chooses to look underneath or at the back it will be found that the wood is common deal. There are, too, some badly tarnished brass hat and coat hooks, of iron. But we are concerned with the seemingness of things. Close by is the hall lamp, "antique," as well as an "antique" hall chair that makes a horrid screeching noise against the tile floor and rejoices in an old oak colour, acquired in the ammonia chamber, and a lavish possession of worm-holes, provided by a shot gun. However, we must pass to the dining-room, where the furniture is all part of a "suite." The sideboard is a very elaborate piece, with a number of turned pillars that have worked loose, like the knobs on the overmantel. But there is plenty of varnish and plenty of carving; so in this as in other things, life has its compensations. One has to have a very accommodating mind, nevertheless, to be satisfied with other details of the dining-room of "Acacia Villa," such as the slate mantelpiece enamelled to look like marble, the linoleum around the carpet, resembling parquet, and the large brass and silver tray—handsome Japanese work (but wait a while, and the brass and silver will crack, disclosing the Birmingham lead which mimics them). Then there is the drawing-room, with its delicate rosewood furniture and occasional tables, the wonderful array of knick-knacks, books bound in imitation leather, photograph-frames of sham tortoiseshell, and brass-coated fire irons put there to look nice, but never to use, so that the dining-room poker must be commandeered if we want to stir the fire. Or there may be a gas fire with three lovely cement logs, bark and moss complete. Upstairs the bathroom has a window with imitation stained glass made of translucent paper, and walls papered to look like tiles, and a cast-iron bath made to look like a marble one, though the marble comes off where the taps trickle. And there is much the same tale to tell of the bedrooms of "Acacia Villa." The furniture in them is like that in the other rooms, pretentious, but not well made. The drawers stick, and the looking-glass swings loose, so that plugs of paper have to be inserted to keep it straight, nor can one help noticing a copper water-jug embossed with the markings of crocodile skin. Walking downstairs, and peeping into the kitchen—the most truthful room in the house, with its honest tables and shining fender of real iron, and its workaday pots and pans—we may wonder at these things. We may perhaps think of a time when all men were artists and everything in a house was beautiful, or of a much later time, when furniture was well made, and so lastingly satisfactory that people are still eager to buy it. And as we close the gate of "Acacia Villa" we must surely question whether all its pretentiousness is worth one simple good thing.

UBIQUE.



SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.). XVI.—ASHLEY HOUSE, EPSOM.



SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.). XVII. ASHLEY HOUSE, EPSOM: PORCH.



MODERN AMERICAN ARCHITECTURE. XXIX.—LIBRARY, UNIVERSITY OF TEXAS.

CASS GILBERT, ARCHITECT.



DETAILS OF CRAFTSMANSHIP. XLVI.—INLAY AND CARVING ON BACK OF SEATS IN THE SACRISTY, S. CROCE, FLORENCE.

BY GIOVANNI DI MICHELE.

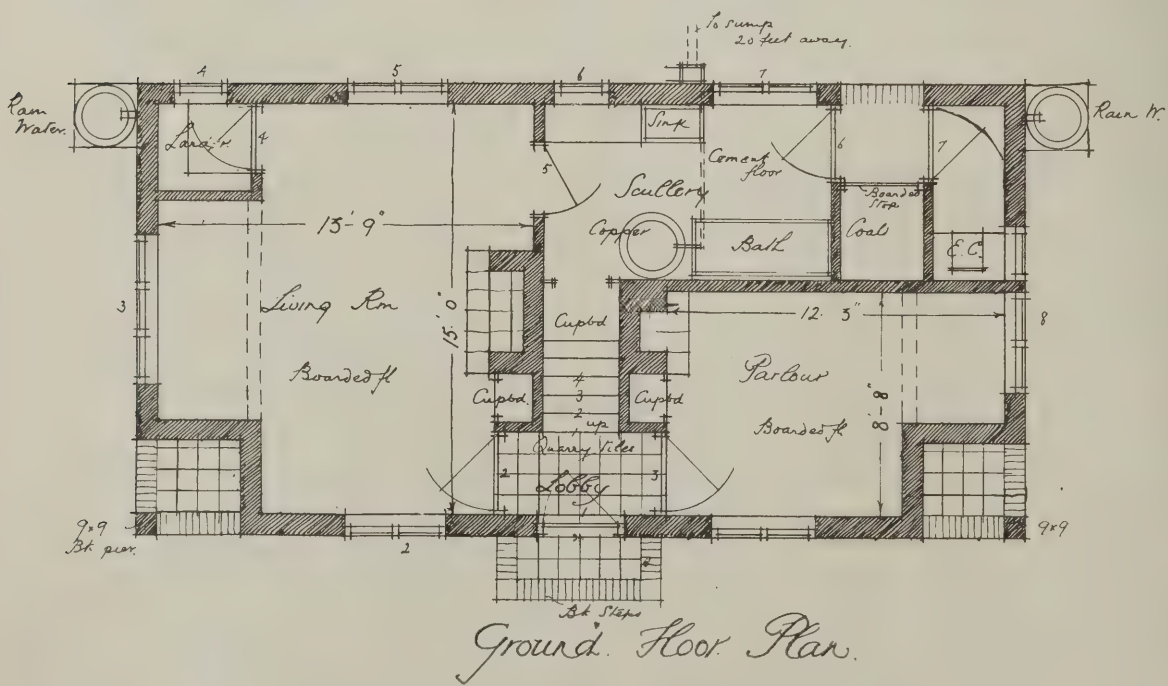
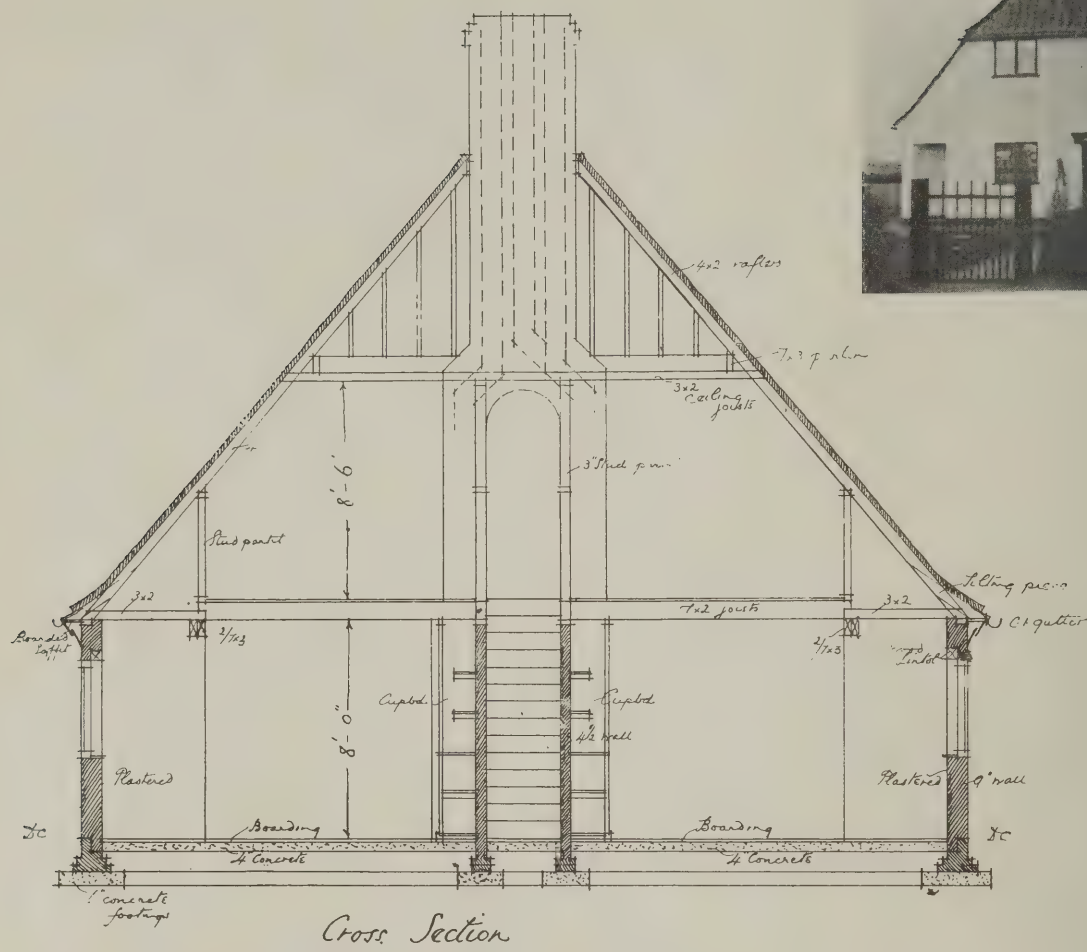
MEASURED AND DRAWN BY GORDON HEMM.

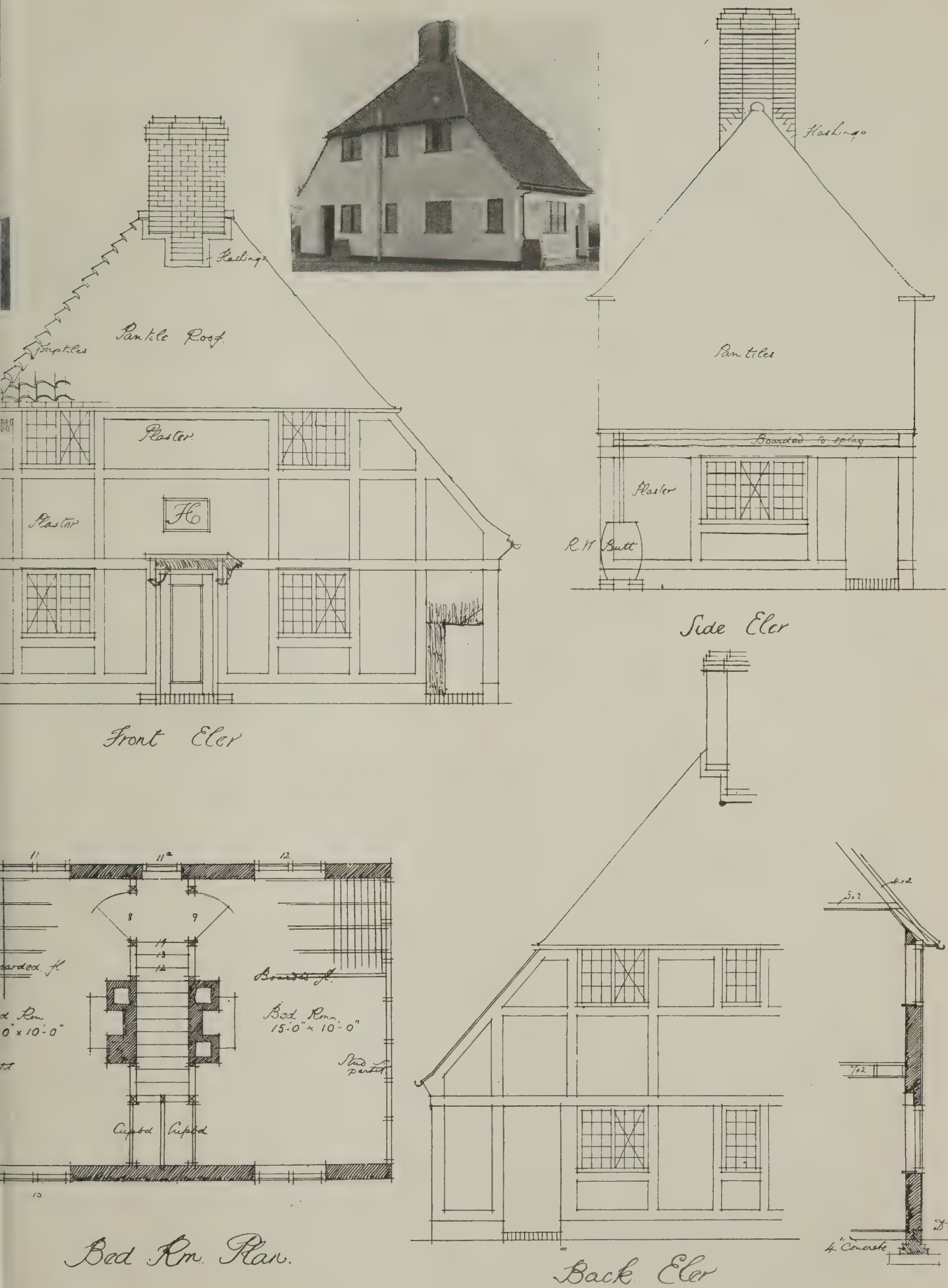


MONUMENTS. VIII.—DESIGN FOR MONUMENT TO CAPTAIN HENRY WHITE.

HABIB BASTA, A.R.I.B.A., ARCHITECT.

Proposed Cottage near Colchester
for Miss M. M. Hicken





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CORRESPONDENCE.

Architects' War Service Form.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—After the very helpful co-operation of your journal in the circulation of the War Service Form in November last your readers may be interested to hear something about the response to this scheme for organising the national efforts of the profession. The forms already returned to my Committee considerably exceed a thousand, about one-half of the applicants being of military age, though, of course, by no means all fit for military service. The Committee's efforts have so far been chiefly centred in dealing with these applicants.

The various changes brought about by the operation of Lord Derby's scheme have not lightened the Committee's labours.

It is hoped that applicants for civil work will be dealt with early this month, and it may be stated in advance that the openings as munition workers seem alone likely to offer any extensive field in this direction.

It has been ascertained that no appointments are to be expected unless candidates have been through a six weeks' course in one of the many "munition schools" now provided at technical centres all over the country, and this opportunity is taken of recommending all applicants for such work to begin at once such a course, so that they may have obtained the required qualification by the time it is possible to prepare selected lists for such work with a view to approaching the munition authorities.

ALAN E. MUNBY,

Hon. Secretary, Selections Committee. R.I.B.A.,
9, Conduit Street, London, W.

Musical Acoustics in the Three Cathedrals of London.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—Mr. Bagenal's interesting article on the above makes one question whether he has given close study to the science of acoustics. These three buildings are all bad acoustically; the degrees of badness being, probably—St. Paul's, Bentley's Cathedral, Westminster Abbey. The last-named is the best, because the sound gets lost, and the other two are bad because the circle has no merit acoustically. In these two the sound revolves, rumbles round, and returns in comfortable time to catch other sounds. But Bentley's building has an added advantage in the customary fog of incense. Sound travels better in a fog.

Mr. Bagenal alludes to "the Queen's Hall (there is no other in London to be seriously considered)." If he alludes to the genuine Queen's Hall in the People's Palace, as it was called when Queen Victoria gave her personal assent for that hall to be named after her, then, well and good. That is the one good hall, acoustically, in London (the Prince's, alas, is no more—as a hall).

If he alludes to the pseudo Queen's Hall in Langham Place, let anyone interested make a little pilgrimage to the Mile End Road, and then make his own tests.

At the time Bach wrote but little was known of acoustics, as a science; indeed, it was not until Chladni's and Favart's treatises appeared that it was taken at all seriously.

To-day, however, an architect should be able to guarantee that his buildings shall be good acoustically.

PHILIP A. ROBSON, F.R.I.B.A.

Westminster.

Sociology for Architects.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—In your Editorial observations in the Journal of December 22, there are two sentences that strike me as being opportune and just. You say (p. 268) that "assessments are too often made more in accordance with the whims, caprices, and financial exigencies of an incompetent board than with ascertainment and equity." I have only too much reason to know that this is entirely true, and that the fact operates most unjustly towards property-owners and builders, as well as to the detriment of the tenant. If you had said that such boards occasionally add dishonesty to incompetency, I could not have contradicted you. I know of an instance of a man acting as chairman of such a board at a time when he was deeply interested in a good deal of the property that came before him for assessment.

The other observation that struck me as being sound and true occurs on p. 269, where you say, "we always insist that an architect is bound to be more or less of a sociologist." Certainly the man who designs houses should study the habits of the people who are to dwell in them; and almost simultaneously with my reading of your remarks I saw, in an obituary notice of an architect, that for some time he lived in working-class flats in order to gain first-hand knowledge of his subject.

S. S. L.

London, N.W.

THE PLATES.

Ashley House, Epsom.

THERE is a simple robustness about the façade of this house which marks it down as the work of some such architect as Chambers. It depends entirely for effect on its proportion, which is well studied. The uninformed might be disposed to regard it as little more than an essay in bare building: the windows mere holes in the wall, with neither hood nor pediment to relieve them, but the architect with an eye for refinement will admire the house for the absence of the trimmings so profusely applied to modern designs. Plain bands across the front mark the first and second floors, while a rich doorway gives a focus of interest for the whole composition.

Library, University of Texas.

This is an admirable design by Mr. Cass Gilbert, noteworthy for the successful treatment of the large arcaded windows at first-floor level, and the wide-spreading cornice, which throws a deep shadow. We regret that we have not been able to obtain a plan of the building.

Woodwork in S. Croce, Florence.

The backs of the seats in the sacristy of S. Croce, Florence, are enriched with some very remarkable inlay and carving by Giovanni di Michele. The pattern in the frieze is especially fine. It is naturalistic in feeling, yet carefully correlated to the architectural lines.

Design for a Monument.

The design for a monument to Captain White by Mr. Habib Basta, A.R.I.B.A., is to be carried out after the War.

Exterior Mouldings, Free Trade Hall, Manchester.

This plate is self-explanatory.

Cottage Near Colchester.

In this design the aim of the architect, Mr. W. J. Kieffer, of Westminster, has been to gain the effect of a true Essex cottage. The builder was Mr. F. Hutton, of Birch, near Colchester. The two photographs of the exterior, included on the plate, were taken by Miss Day, of Bishop's Stortford.

THE CALDARIUM OF THE BATHS OF CARACALLA.

IN his two drawings, here reproduced, of the caldarium of the baths of Caracalla at Rome, Mr. Walcot has had to rely largely on what excavations have revealed of the extensive areas covered by the great thermæ, for what now remains of the carcase does not provide that very definite ground-work for reconstruction which is afforded by the great fragment of the Basilica of Constantine. These two compositions are based on the restorations by the late Sergius Andrejewitsch Iwanoff, who died in 1877. Iwanoff's work is actuated by the purer methods of archæology and has less of the tendency of other schools to carry a conjectural restoration beyond justifiable limits. A similar restraint has inspired the artist, only less than the actual building might have done, to take the reconstruction further, into the domain of his own art, in which he can express his interpretation unimpaired.

The drawings represent the interior and exterior of the caldarium, the great rotunda on the south-west flank overlooking the vast enclosure in which the Stadium was placed.

Though Iwanoff's plan puts the caldarium here, according to other authorities this circular room con-

tained either the *laconicum* or the *sudatorium*, and there is no really conclusive evidence of its complete nature. We know that it was a hot-air apartment, on the sunny side of the baths, and a magnificent room; but even in the catalogue of the departments of the great baths contained in the works of the ancient writers there is much confusion, due no doubt to the impossibility of applying exactly the several divisions of the original *balneæ* to the complex institutions into which the thermæ developed, suggesting club-houses with every facility for recreation in conjunction with the nominal pursuit of the bath.

The view of the interior, with the marble *labra* and its fountain of scent under the dome, gives us a comprehensive idea of the lavish nature of the decorations, and all the luxury and minute attention to the personal comfort in which the Romans must ever be acknowledged as connoisseurs. The exterior composition does not stand in need of much more elucidation. We see the great height of the building, due to the general floor of the baths being raised some twenty feet above the ground level. The dominating feature of the Stadium, it makes with



THE BATHS OF CARACALLA, ROME: EXTERIOR OF THE CALDARIUM.

(From a Drawing by W. Walcot.)



THE BATHS OF CARACALLA, ROME: INTERIOR OF THE CALDARIUM.

(From a Drawing by W. Walcott.)

the painted wall-base a striking background to the procession of an Imperial Triumph terminated by a State visit to the baths. In the throng of slave-borne litters and the whole Imperial retinue there is a suffusion of those Oriental influences with which Roman life was already beset.

A DEVELOPMENT PLAN FOR LONDON.

IN the R.I.B.A. Journal Mr. D. Barclay Niven, F.R.I.B.A., gives some interesting particulars of the London Society's work in connection with the London Development Plan, suggested by Sir Aston Webb. The plan having been decided on, a special fund was started, which resulted in £500 being subscribed, and this fund has given employment to a number of professional men ineligible for the Army, enabling them to tide over the present difficulties and utilise their talents in congenial work. But it is estimated that at least another equal amount will be required to complete the work, and a special effort is now being made to this end. The scheme once

assured, a plan committee was formed, and six of its members—Professor S. D. Adshead, Mr. Arthur Crow, Mr. W. R. Davidge, Mr. H. V. Lanchester, Mr. H. J. Leaning, and Mr. Niven—undertook the particular direction of the assistants employed on each of the six radiating sections, corresponding with the sections into which the Conference of the Local Government Board on the Road Board proposals had divided London. These directors have since added Mr. L. Chubb and Mr. W. E. Vernon Crompton to their number, and have appointed Mr. A. E. Richardson as hon. secretary, to secure uniformity in production. The work is being carried on in the society's premises in Abingdon Street, Westminster. When completed the plan will contain imaginative proposals founded on ascertained facts. It will include the arterial roads recommended by the London Traffic Branch of the Board of Trade, with suggested modifications. It will also endeavour to co-ordinate the most promising of the numerous town-planning schemes and proposals prepared from time to time for different parts of London, together with general suggestions for future development and improvement.

CONCRETE AND STEEL SECTION

(MONTHLY.)

REINFORCED CONCRETE ROADS.

Among the special articles in the forthcoming issue of that most valuable annual "Specification," No. 18, is one on the use of reinforced concrete in road construction. The author, Mr. J. F. Butler, A.M.I.C.E., points out that the increased weight and increased speed of motor traffic on the roads during recent years have not only called into existence a large number of new types of surface construction, but have more particularly emphasised the importance of providing adequate foundations. For this reason, the concrete foundation under stone setts, asphalt, or wood-block paving, has in some cases been laid as much as 15 in. thick. A later development has taken place in the last three years, reinforced concrete having been used for this purpose by a large number of authorities, in some cases experimentally, in other cases on a larger scale after experiments had given successful results.

The advantages are that great strength is obtained with a small thickness of concrete, and that the construction is resilient. Concrete 6 in. thick has been generally used with a light reinforcement equal in cost to about $2\frac{1}{2}$ in. of concrete, so that the total cost is about equal to that of $8\frac{1}{2}$ in. of concrete, whereas the strength is greater than that of 15 in. unreinforced concrete. At the same time the reinforcement gives tensile strength to the concrete, and provides some degree of resilience. It is probable that further experience may show a lesser thickness of reinforced concrete to be sufficiently strong and more resilient.

Wire fabric reinforcement is generally laid with its main wires parallel to the length of the road, and this seems to be the theoretically more correct method, although equally successful results have been obtained with the main wires at right angles to the length of the road.

The first paved road with reinforced concrete foundation was laid in Manchester in February, 1913. Up to December, 1915, about fifty other roads had been laid. In some cases these have been adjacent to, or continuous with, unreinforced roads; and in those cases where sufficient time has elapsed for a comparison to be made, the reinforced road has been superior, having maintained the surface in perfect condition without repair of any kind.

The reinforcement is laid about 1 in. above the bottom of the concrete. This is convenient in practice and correct in theory, the condition being similar to that of a cantilevered floor-slab turned upside down, the wheel taking the place of the support and the earth pressure taking the place of a distributed load of intensity greatest at the support and gradually reducing outwards. The reinforced concrete foundation is sufficiently strong to spread the very heaviest wheel-load over so large an area of underbed that the pressure becomes less than 1 ton per sq. foot, so that even in bad ground there is no subsidence of the foundation, and no hollows form in the surface except from actual wear.

It seems probable that this method of construction will solve the problem of dealing with heavy traffic as far as foundations are concerned.

The construction is applicable to concrete foundations for tar macadam roads, and has been used with success. Tests are also being made for similar foundations to water-bound macadam roads. In these cases the concrete is finished with a toothed surface to form a key for the covering material.

The construction of complete concrete roads is to some extent a revival, such roads having been laid in England some years ago, but without success. Improvements in the manufacture of cement, in the selection of concrete materials, and in the mixing and placing of concrete, primarily due to the greater attention paid to these points since the introduction of reinforced concrete, have made it a more reliable material than formerly, with the result that concrete roads are now largely used, more particularly in the United States, where the following areas have recently been laid:

	Sq. Yds.
1909	364,000
1910	850,000
1911	1,800,000
1912	6,470,000
1913	10,100,000
1914(about)	19,000,000

These figures are all the more significant in that concrete has been selected for use after long and searching tests with various materials.

In some cases plain concrete is used, elsewhere it is reinforced. Transverse joints are placed about 30 ft. apart to allow for expansion and contraction. These are $\frac{1}{4}$ in. thick, filled with bituminous material. The joints are the only unsatisfactory feature, and are more or less a source of weakness. The later tendency is to place them further apart and to reinforce the concrete. This has been the method adopted in England, and it is now proved that where reinforcement is used the joints are entirely unnecessary and may be dispensed with.

Usually the concrete is 6 in. thick. The reinforcement is generally wire fabric or expanded metal. This not only does away with the joints but gives a very much stronger road, and is from every point of view a better form of construction. It costs slightly more, but as the whole cost of a reinforced concrete road is rather less than that of a water-bound macadam road it should never be omitted.

The proportions of concrete that have given the best results are: 3 parts broken stone to pass a $1\frac{1}{2}$ in. ring, $1\frac{3}{4}$ parts sand graded from $\frac{1}{4}$ in. down to dust, and 1 part Portland cement. The ground surface should be thoroughly soaked before the concrete is laid, to prevent the water being drawn away from the concrete, and the surface of the finished concrete should be covered overnight with tarpaulin, and then covered with 2 in. sand or loam watered each day for from ten to fourteen days to produce a harder surface. The road should be left from two to three weeks before being opened to traffic.

The average maintenance cost of concrete roads in the United States is one-tenth of a penny per sq. yd. per annum. The roads may be coated with tar spray and granite chips, which is a precaution against such small cracks as may occur

owing to lack of care in joining up one day's work to the next, or in insufficient watering during construction. Cracks from these causes may be such as to just admit the blade of a knife, but where the roads are tar-sprayed the tar bridges over the cracks and makes them of no account. The tar spray requires to be renewed annually at a cost of about $1\frac{1}{2}$ d. per square yard.

It is doubtful whether concrete road surfaces are suitable for heavy motor lorry traffic, but they are ideal for suburban side streets and secondary county roads.

The roads are laid with a side slope of 1 in 50, which is sufficient to throw off water. This small slope almost eliminates side-slip.

Other advantages are economy of first cost, economy of maintenance, and freedom from dust in summer and from mud in winter.

A LARGE REINFORCED-CONCRETE ARCH.

The accompanying illustration shows details of self-supporting reinforcement for a large arch rib at Fort Worth, Texas.

In the clear the spans of the arches ranged from 125 ft. to 200 ft. in length. Three-hinged, ribbed arches were used having hemispherical ball and socket, cast-steel hinges. No falsework was used except comparatively light timbering necessary for the erection of the structural steel reinforcement of two of the spans. For high structures and for those over streams subject to sudden and great variation of water level this method is considered cheaper and safer than falsework supported from the bed of the stream.

Arch Rib Reinforcement.

Reinforcement of arch ribs and braces consists of medium steel structural shapes, supplemented by reinforcing bars. Structural shapes are also used for the main supports of the stairways. All other reinforcement consists of square twisted bars of high elastic limit. As shown, the rib reinforcement consists of curved lattice girders, to the ends of which are bolted cast-steel hinges. The chords of these girders are made up of four angles arranged in the shape of a cross. All web members are made up of two angles. Three of these steel girders are used in each inner and two in each outer rib of each span. The individual steel girders are laced together in the plane of the top and bottom chords, and are also connected by transverse frames in vertical planes under each post. The transverse braces connecting the four ribs are reinforced by lattice girders attached to the rib reinforcement. No reaming or painting was called for. The hinge castings are bolted to the steel ribs and all other connections are riveted. At each upper panel point of the steel ribs clip angles were provided, to which were secured the transverse timber beams supporting the rib forms.

A system of lateral rods for use during erection was provided in the plane of each chord of the ribs. These rods were used to line up the steelwork and to hold it in line while the ribs were concreted. These

rods were not removed until after the completion of the work. The transverse braces are also reinforced in each face with continuous bars, the function of which is to resist bending in the braces due to transverse forces.

In addition to the steel reinforcement required to resist the calculated stresses in the members, a certain quantity of steel is used to prevent the formation of shrinkage, settlement, and temperature cracks. This steel is used in the exterior faces of thin walls in a longitudinal direction in the slabs, and to reinforce the corners where two walls join. All braces, ribs, and posts are wrapped with heavy wire closely spaced, to which the longitudinal steel is secured.

Stresses.

The structural steel arch rib reinforcement takes stress in two independent steps: First, as the ribs are filled with concrete the members take certain initial stresses, which, as the concrete sets, remain in the steel. This initial stress in the steel was not allowed to exceed a maximum of 12,500 lb. per sq. in. in compression, as given in the list of unit stresses. Second, after the ribs are finished and the construction of the posts and deck is under way, and, later, when the structure is carrying live load, stresses are set up in the ribs and carried jointly by the steel and concrete in the usual manner. The assumed ratio of the moduli of elasticity of steel and concrete was taken as fifteen. The maximum possible compressive stress, therefore, in the structural steel reinforcement of the ribs would be about 12,500 lb. plus fifteen times 500 lb., or 20,000 lb. per sq. in. This is based on the assumption that the ribs and braces are completely filled with concrete in such a short time that it does not begin to set before all the load is in place, and also that the stress in the concrete at the centre of gravity of the steel chord is 500 lb. per sq. in. As a matter of fact, the ribs were concreted in

sections, and the braces were not concreted until the concrete in the ribs had set for several days. Consequently, the initial compression in the structural reinforcement was less than that mentioned above. The centre of gravity of the steel chords is some distance in from the face of the concrete, so that the concrete stresses at this point, and, therefore, the stress in the steel, is lower than that assumed. The actual maximum compression in the structural reinforcement is about 16,000 lb. per sq. in.

Lines of Pressure.

Lines of pressure for the ribs were worked out graphically for the various positions of the live load, combined with the dead load, and for the various stages in the construction of the deck. In order to allow for the weight of the ribs themselves, their dimensions were first assumed, and later were revised where necessary. The neutral axes of the ribs were drawn midway between the extreme pressure lines. This made the neutral axis of the rib a constructive curve, approximating a parabola with its apex at the crown of the arch. The axis as drawn followed closely the pressure line for the full dead and live loads. The inner and outer ribs were made of the same vertical dimensions, but of different thickness.

The next step was to find the stresses in the reinforced-concrete rib for the various stages in the construction of the deck, and for the dead and live loads, under working conditions in the finished structure. The quantity of steel required at each point to keep the extreme fibre stress in the concrete down to 500 lb. per sq. in. for the worst condition was then computed. The required area of steel in either face of the rib at any point was not allowed to exceed 2.5 per cent. of the total cross-sectional area of the rib. Where, on first trial, the required quantity of steel exceeded the above maximum a re-design was made, using a rib of a larger cross-section.

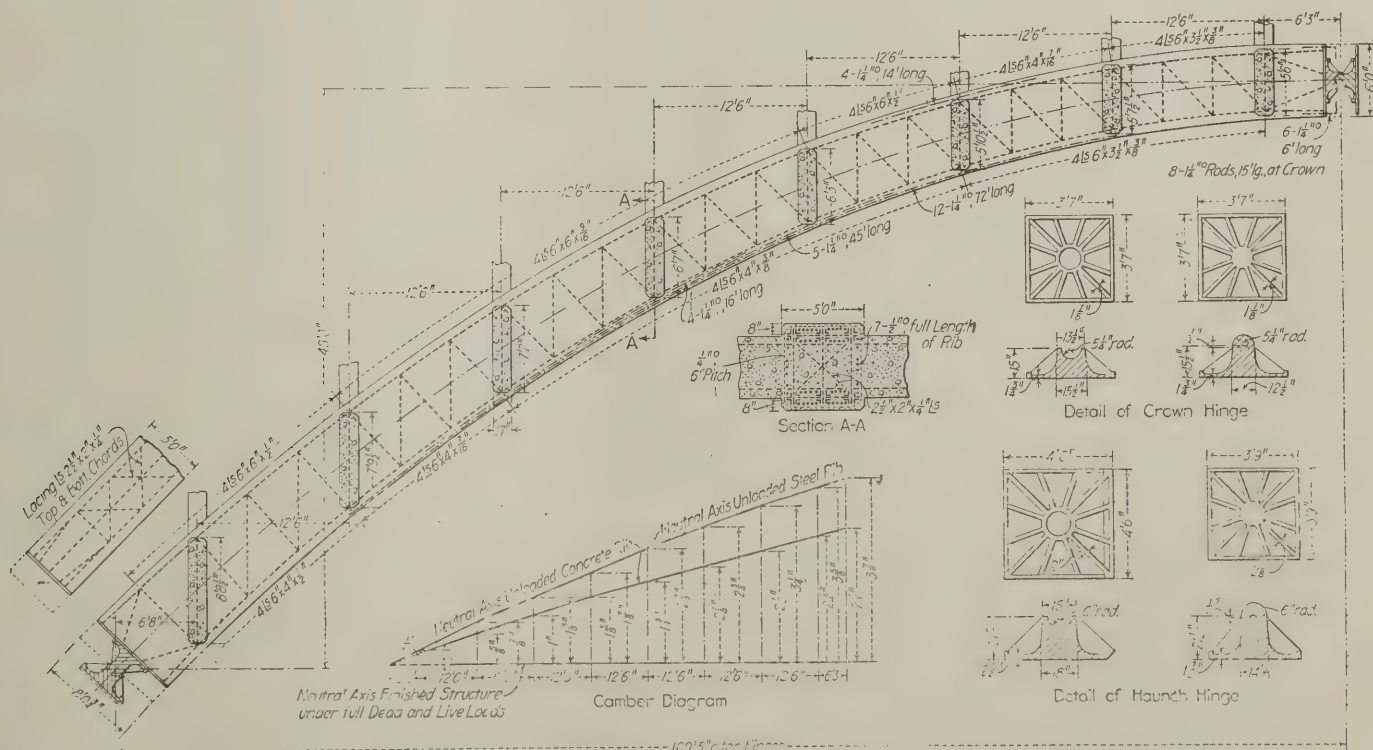
Transverse forces of wind and water

pressure were assumed to be resisted wholly by the ribs and braces acting as a series of portals, in the same manner as the columns and girders of an office building act to resist wind pressure. The deck was not given credit for any resisting power, because of the presence of the expansion joints over the haunch and crown.

CONCRETE PILES 106 FT. LONG.

Pier construction in San Francisco Bay has called for concrete piles of unusual length because a considerable depth of soft mud and ooze overlies the solid bottom in many places where all-concrete structures have been built. The engineering department of the State Harbour Commission has designed and built longer and longer piles as the work has progressed, until on the outer end of one pier it was deemed advisable to use piles up to 106 ft. in length. Some of these piles were 20 in. square at the butt with wedge-shaped tips 10 in. by 20 in. in cross-section. The reinforcing consisted of eight 1-in. bars with continuous hooping of wire wound on 3-in. centers, except for 4 ft. at either end, where the winding was on 2-in. centers. The Harbour Commission's standard concrete mixture was used, consisting of one part of cement and five parts of aggregate proportioned for maximum density.

The piles are cast at a point from which they can be conveniently skidded upon barges, which are towed to the pile driver, so that there is no unnecessary handling between the casting yard and the pier. In lifting piles more than 80 ft. in length it is the custom to sling each unit from lines attached at four points. A three-drum hoisting engine is used, the third drum being used to operate the steam hammer. The concrete structure, or the pier proper, is protected by a fender line of creosoted piles with triple car-spring buffers between fender-line stringers and concrete beam; the creosoted piles being protected by green timber sheathing.



SELF-SUPPORTING REINFORCED CONCRETE ARCH-RIB AT FORT WORTH, TEXAS.

CRACKS IN "IN SITU" PAVINGS.

[SPECIALLY CONTRIBUTED BY G. METSON, LICENTIATE R.I.B.A.]

ATTENTION having been drawn to the very cracked condition of a terrazzo floor in a large building, the architect replied that this class of floor *always* cracked, and the tone in which the assertion was made rather implied that the trouble was beyond remedy. That, however, is too incorrect a view to take of the matter, as at many buildings large floors and entrance halls of terrazzo or mosaic can be seen in quite as perfect a condition as when first laid many years ago.

The principal causes of cracks in these *in situ* pavings are—(1) Badly constructed foundations when on solid ground, (2) settlement of buildings, yards, and areas, (3) steelwork too near the top of the concrete in upper floors, (4) inferior materials, (5) bad workmanship.

The Concrete Bed.

Taking these in order, the granolithic or other *in situ* paving to yards, areas, and basement floors, or to ground floors where there are no basements, are not infrequently laid on a bed of concrete spread over a layer of hard brick or dry rubbish. The ground itself may not be in a fit condition to receive the hard core; it may be soft from rain, or from water from the building operations, or it may itself be waterlogged or of a spongy nature. Ground in such condition is not fit to receive any kind of paving. It should be firm, and when it is not naturally so, it should be rammed. A bed of hard core is indispensable on soft ground. During an extended experience the writer has had to cut through such floors or pavings, and in most cases where the ground has been satisfactory he has found the hard core layer to be at fault. This hard core bed is put in not only because it is cheaper than a thicker layer of concrete (though foremen often consider this the sole reason for it), but also to form a foundation for the concrete, and it is of the utmost importance that it should be rammed solid; more often than not, it is the variation in thickness of this broken brick layer that causes or tends to cause the cracks in the upper layer of concrete and the paving above.

In order that the broken brick layer may be rammed solid, the brick must be broken to such a size as will permit this to be done—the thinner the bed the smaller the ring through which it should pass. By ramming solid is meant that a bed of core is made of the specified thickness at all parts of its area; but if too large stone or brickbats are used they will not interlock nor be at all solid, and some parts of the concrete bed above will be of varying thickness, the concrete filling the many voids in the surface of the hard core layer—a condition which is to be avoided, because, unless the concrete is of equal thickness everywhere the thinner parts will harden more rapidly than the thicker parts, and the contraction and expansion will not be even: all of which conditions tend to cause cracks.

Not infrequently—one might almost say generally—the concrete is put in as one bed, with no idea of laying it down in bays, though the finished two or three inches of granolithic paving is thus treated. This breaking up of the area into bays is done for two reasons, first, because it permits the men to work all round the bay and make a proper finish to the surface; secondly, because it breaks

up the area for expansion purposes. This second reason should also apply to the underlaying of concrete, which should also be laid in bays. On upper floors the bays can be determined by the spacing of the joists, the joint coming over a joist; this, however, is rarely done, probably because the concrete is put in by the building contractor, whilst the granolithic paving is laid by a specialist firm—a state of things which could be remedied by the architect specifying otherwise. There would, of course, be a slight addition to the cost, as boarding would be required for the edges.

Where the granolithic paving is laid direct on to the freshly deposited concrete this system of separate bays is followed, and the key of the paving to the concrete is excellent, but though adopted for basement floors, areas, etc., it is rarely done on upper floors.

When two adjacent bays are being closed in, a thick strip of tarred brown paper or thin tarred strawboard should be inserted between them to act as expansion strips, but a better method is to leave space of $\frac{1}{2}$ in. by means of greased boards, to be filled in with asphalt. The mastic or asphalt used, however, would need to be of a quality that would yield to changes in temperature and not become brittle with age.

Cracks Due to Unequal Settlement.

The settlement of buildings, particularly unequal settlement (which is most usual), is a very frequent cause of cracks in these classes of pavings. The cracks generally occur where the floor is carried on steel joists supported within the building by steel stanchions or columns, the walls sinking more than the stanchions. This cause could only be overcome by allowing time for the walls to settle before the floors or pavings are put in, but, under present conditions of speedy building, such a course is not possible.

It is said that *in situ* pavings crack less frequently on steel-frame buildings than on brick erections, owing probably to the more uniform settlement.

The settlement of yards and areas results from inequalities in the nature of the soil; where these exist solid work cannot be expected. The concrete bed should be thickened, or bridging rods should be embedded in it to reach from one side of the firmer ground to the other. The writer has in mind the yard of a building in which the contractor dug a pit several feet deep to run his putty in for plastering purposes. This pit was filled in and rammed solid, to all appearances, then left for six or seven weeks before the yard paving was commenced, being rammed again just prior to the laying; but the corner always gave trouble by settlement cracks in the paving, and at last rods forming a square mesh embedded in the concrete were put in right across the old pit excavation and seem to have proved a remedy.

The third cause of cracks is given as the steel joists being too near the surface of the floor. Where the small joists embedded are too slight for purpose or space and the deflection is excessive under such loads as the floor has to carry at times, this as a cause of cracks is readily understood, as the concrete floor would crack and, consequently, also the one or two inches of *in situ* paving. But, assum-

ing that the joists are not in fault, the cause of cracks is not so easy to determine, except that this class of paving requires a solid foundation, and the thicker the bed of concrete over the joists the better for the whole condition of the paving.

As regards the strength of the concrete floor, the spot at which you would expect cracks to appear would be midway between the joists, but the cracks almost invariably appear over the joists themselves, showing that it is the lack of a solid bed which is the cause. Again, it must not be forgotten that any crack due to expansion, contraction, or vibration would be here, the concrete being thinnest at this point. By keeping the small joists down from the top of the concrete, if necessary forming stoops on the underside, very solid paving can be formed. The stoops add to the first cost, but the expense is made up in the maintenance and appearance of the floor.

Cracks Due to Bad Materials and Workmanship.

With proper supervision there should never be any cracks due to bad material. The use of a hot cement is bound to cause cracks, as expansion is sure to follow, and inert cement is also useless. Hot cement, however, is rarely seen now, owing to the improvements in the manufacture of Portland cement.

The sand or granite chips, or other aggregate must be clean, and where the material is not naturally so, it must be well washed. The careful preparation of the materials, however, will be labour lost unless the mixing platform or surface is equally clean and kept so. The water also must be clean, free from acids, etc.

Where dirt gets into concrete at that place the adhesion of the particles is impeded or prevented altogether, and a weak spot is thus created from which a crack can develop, to be extended by subsequent vibration or other causes. It is hardly necessary to mention that all surfaces to receive concrete or paving must be brushed or washed quite clean before any paving is laid.

The proper grading of the aggregate is of importance. This depends on the thickness of the paving to be laid. The idea in all pavings is to obtain a dense layer, and the too abundant use of Portland cement is not advisable. The aggregate should be of such size and the sand of fine material of such proportions that the cement used will coat every portion.

The fifth cause of cracks is bad workmanship and slack supervision. Upon examination of cracks in terrazzo or other similar pavings which occur over the small joists in a concrete floor it is very common to find that the concrete has never had any adhesion to the steel joist, either because of the rusty condition of the steelwork, or because the joist has been painted or oiled; where the joist has been freed from rust and loose scale before the concrete has been put in, the adhesion of the latter to the steelwork is much improved and the cracks (if any) are neither as numerous nor as large: so that the cleanliness of the steelwork around which concrete is to be placed is an important factor in preventing cracks in *in situ* pavings.

In upper floors, where the paving cannot, as a rule, be put on to the concrete whilst the latter is still in a moist state, unless the concrete is perfectly clean, the

material forming the paving cannot properly obtain a key to the concrete. Dust, sawdust, dirt or rubbish of every description must be brushed or cleaned off the surface of the concrete before any paving material is laid. The presence of lime in the dust lying around, or the storing of lime in a bin upon the concrete that has to be paved over, is sure to cause failure unless every precaution is taken to ensure that every particle of it is removed before the paving operations on such surfaces are commenced.

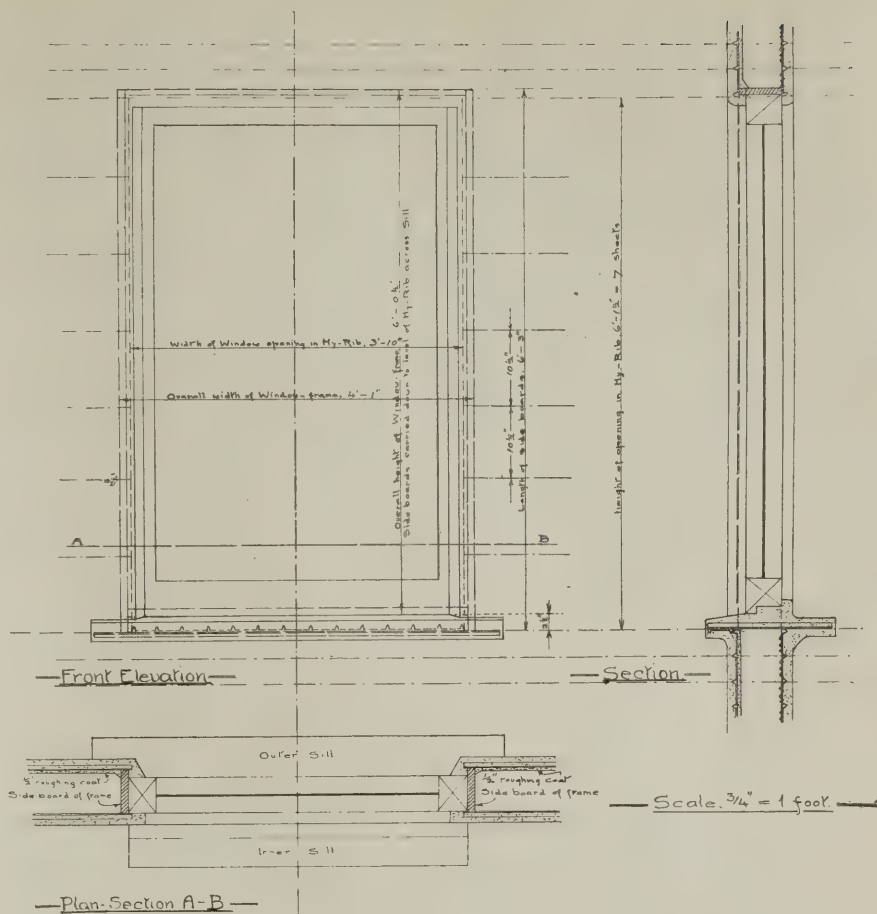
Before any paving is laid, in addition to brushing or cleaning the surface of the concrete, the latter should be well wetted in order that the paving may the better adhere to it. This wetting can be done by a hose pipe very satisfactorily, driving all the dust and dirt before it, and if this is done once or twice on consecutive days preceding the laying of the paving any free lime that has blown, fallen, or been left upon the surface of the concrete will be slacked beyond injury to the subsequent work.

Cracks Due to Vibration.

Whilst instancing these small examples of bad workmanship or supervision, it would be as well to mention that walking over paving just set, even when board protection is afforded, should be discouraged—particularly on pavings on upper floors, as vibration in any form is to be avoided until the paving is absolutely firm and solid. Cracks may not immediately show themselves from such vibration on a paving not completely hardened, but weeks afterwards they may appear, when perhaps the cause may have been forgotten. The writer recalls a case where a careless labourer dropped a scaffold board from his shoulder on to a floor which had been paved with 2-in. granolithic a week previously. No damage at the time appeared to have been done, but within six weeks a crack began to show. The concrete and the condition of the joists were known to be good, and as no other crack appeared on the floor the only cause that could be assigned for the crack that showed was this violent vibration on a floor not perfectly set; more particularly would this appear to have been the cause as the crack was practically at the line where the board fell; but whether this were the real reason or not, nothing likely to cause vibration should be allowed on any such pavings until they have set hard and dried out. The length of time that this will take must depend upon local circumstances, as whether it is a basement floor or an upper one, where drying can take place from both sides of it, etc.; also the weather that prevails and the season of the year. If good work is to be executed ample time must be allowed for it.

Hair Cracks.

Although hair cracks are not a serious defect in pavings, inasmuch as they are not a source of weakness, they become a disfigurement when aged and filled with dirt, showing up as a crazed pattern, though in some pavings subject to constant traffic they will be worn off, being but surface cracks of the depth of a hair. This condition generally results from not exactly bad workmanship, but from surfacing in a wrong manner. In no position is a glass-like surface to a paving required, yet some workmen are very fond of so finishing it—by finely trowelling the face with a metal trowel. By such trowelling the finer particles of the paving mixture are brought to the upper surface, and where the practice is persisted in a thin skin of cement is formed on the top, which



WINDOW IN CONCRETE COTTAGES, MERTHYR.

crazes. Such a paving indoors is a distinct disadvantage, because this fine or flat top wears away more easily than a cement containing a proportion of granite dust or sand, and such finished pavings will ever create dust when swept; moreover, they wear slippery. Pavings are best left from a wooden float, which gives a surface rougher for foot grip and more durable in wear.

Another cause which assists in these flat top pavings showing hair cracks is the drying out too quickly. Wind, sun, and frost must be kept off them by the provision of tarpaulins as draught or sun screens. The sun will cause the concrete to expand unequally, the surface and the body of the concrete being at different temperatures, and when the sun goes down and a cold wind blows over the surface crazing is almost sure to result.

Cracks caused by bad materials or workmanship are frequently distinguishable from those caused by settlement, by the raising of one edge of the crack above the adjoining surface and the emitting of a hollow sound when tapped.

A method of repairing *in situ* floors or pavings is to cut out with chisel and mallet a recess square in section of a sufficient depth to reach the bottom of the crack or the deepest part of the break in the concrete. On upper floors the floor should be strutted from solid floors or walls below whilst this cutting out is being performed, so as to avoid any cracks being caused, or small unnoticeable cracks extending. It is then necessary to thoroughly clean the sides and bottom of the recess and to remove all loose dust or particles of old concrete. This can be done by stiff brushing, and if though desirable the solid aggregate can be brought out to form a better key for the grouting by washing the

sides, etc., with a solution of hydrochloric acid (1-5), well rinsing them after the treatment with the acid. The recess can then be grouted up, and whilst this last is still moist the granolithic portion can be put in and levelled up to the surface of the floor.

WINDOWS IN CONCRETE COTTAGES.

The accompanying illustration shows the elevation, section, and plan of a window in one of the concrete cottages built at Gellifaelog, Penydarren, by the Merthyr Corporation, under the direction of Mr. F. Thackeray, the borough architect. The walls are of hollow construction, with Hy-rib sheeting inside and out, the finished outer surface being rendered in cement plaster and the inner surface finished with ordinary lime plaster.

OBITUARY.

Mr. A. R. Barker.

Mr. Arthur Rowland Barker, J.P., aged seventy-three, of Southgate, for more than forty years architect and surveyor to the Diocese of Winchester, left estate which has been proved at £27,809.

Mr. T. Cosford.

The death is announced of Mr. Thomas Cosford, of Northampton, in his eighty-third year. Many years ago Mr. Cosford was regarded as one of the largest builders in the town, and was responsible for the erection of a number of churches, factories, and residences in Northampton and the district.

LEGAL.

Engineering and Building Contract.*Wellman, Seaver, and Head v. The Skinningrove Iron Co., Ltd.*

December 21. Official Referee's Court. Before Mr. E. Pollock.

In this action Messrs. Wellman, Seaver, and Head, Ltd., of Victoria Street, Westminster, claimed from the Skinningrove Iron Co., Ltd., the sum of £25,980 9s. 11d., balance of account for work done and materials supplied in connection with the construction of two furnaces and buildings associated therewith at the Skinningrove Works, near Middlesbrough. The contract price was stated to have been £80,313, of which the greater part had been paid, leaving the balance sued for.

The defendants pleaded a set-off, and counter-claimed in respect of damages alleged to have been sustained owing to the plaintiffs having failed to complete their work within the specified time. It was alleged by the defendants that although the plaintiffs had undertaken that the first furnace should be ready for the manufacture of steel within 7½ months from the date of the receipt of the order in August, 1912, it was not ready until some months later.

During the opening speech of counsel, which occupied four days and involved the dealing with letters, plans, and other documents to the number of nearly 20,000, it was stated that the plaintiffs had given up a number of items in their claim which amounted in all to something over £6,000, and the position was that the claim was now for something over £19,000. Against this the defendants had paid into court the sum of £10,000 with a denial of liability.

Mr. A. Colefax, K.C., with Mr. Ricketts, appeared for the plaintiffs, and Mr. Barnard Lailey, with Mr. Willoughby Williams, for the defendants.

Mr. Colefax, K.C., in the course of his opening, stated that the case involved a great deal of detail, although the matter in dispute fell under only three distinct heads. The parties made a contract in August, 1912, by which the plaintiffs were to supply the defendants with two 60-ton steel furnaces, which were to conform to a specification with certain modifications specified in writing at the time of the acceptance of the offer. The furnaces were to be of a particular kind known as rolling or tipping furnaces, resting on rollers. The defendants, said counsel, had carried on the manufacture of steel for some time prior to the date of the contract, and had a "Talbot" furnace of about 250 tons capacity. After some months, in October, 1912, the defendants suggested that they wanted material alterations in the furnaces which the plaintiffs had contracted to supply. In the first place they wanted the furnaces to be of 120 tons capacity instead of 60 tons. That, apart from the increased weight and strength, involved material alterations in the work, and a new contract was made. It was upon that contract that the dispute arose. The amount of the original contract was £58,000, and the increased cost was occasioned not only by the alterations in the furnaces, but by the fact that those alterations necessitated the construction of an additional bay to the building. Since the case commenced, said Mr. Colefax, an arrangement had been come to between the parties by which plaintiffs withdrew items of their claim to the amount of £5,000, while the defendants had practically withdrawn the whole of their counter-claim, which included £6,000 for delay, with the exception of

items amounting to between £700 and £800 for bottoming the furnaces. The defendants had entered into a contract under which they agreed to pay for extra work at prices scheduled in a letter to which they had assented. If that was the right view it was not, counsel argued, open to the defendants to say that the extra work was necessitated by faulty design. All the plaintiffs had to do was to prove that the work had been done, and having proved that they were entitled to be paid for it. Dealing with the numerous items which constituted the plaintiffs' claim for extras, work which plaintiffs had had to do owing to the altered requirements of the defendants, counsel said that, in addition to the claim for work done, there was a claim for interest based upon the terms of the contract relative to the terms of payment. The plaintiffs were to receive various sums as the work proceeded, and were to be paid interest upon the amount outstanding. The plaintiffs, he contended, had been denied the use of their money while the defendants had had the use of the furnaces.

Mr. Benjamin Head, managing director of the plaintiff company, a member of the Institute of Civil Engineers and of the Iron and Steel Institute, gave evidence as to the negotiations which led up to the contract. He said it was never suggested that the furnaces should be suitable for the "Talbot" process of steel manufacture as asserted by the defendants.

Mr. Head's examination was not concluded when the further hearing of the action was adjourned until next term.

NEWS ITEMS.*"Some Notes on Reinforced Concrete."*

A paper with this title is to be read before the Surveyors' Institution on Monday next, January 10, at 5 p.m., by Mr. R. M. Kearns.

Building Trade Dull in Berlin.

The Berlin Chamber of Commerce in its yearly report claims that, *except in the building trades*, the situation at the end of 1915, was more satisfactory than anybody expected a year ago.

Greenock Housing Scheme.

The Greenock Corporation have decided to erect at least seventy-five cottages for tradesmen on a site at Craigieknowes, near Carsdyke Railway Station. Sir Hugh Shaw Stewart has granted ground to the Corporation at a rate which will enable them to carry out the scheme on a sound financial basis.

Regent Street Rebuilding.

In connection with the new building to be erected on the site of East India House, Regent Street, Argyll Place, Kingly Street, and Foubert's Place, the scheme has, by arrangement with His Majesty's Office of Works, acting in accordance with Treasury instructions, been postponed for an indefinite period—possibly until 1920.

Builders' Appeal to the Government.

A deputation to the Prime Minister is being arranged to appeal to the Government to secure relief from onerous pre-war contracts, in particular building contracts. It is suggested that a court should be created with powers to postpone these contracts to the end of the war. "The Government has commandeered building materials, the financial position is very difficult, and we are paralysed in all sorts of ways," said a contractor. "If con-

tractors have to keep their contracts they must enter into direct competition with the Government for labour."

Reparation and Waterproofing.

The first consideration of reparation is the cost, and many wet structures are neglected because the owners are unaware of an inexpensive remedy. The makers of Pudlo state that they will be glad to advise property owners of the least costly way of successfully combating dampness and water in any building. We learn that the well of a lift at Haslingden which has hitherto been flooded has been made bone dry with Pudloed cement.

New North Court, Emmanuel College, Cambridge.

In the description of the new north court at Emmanuel College, Cambridge Mr. Leonard Stokes, F.R.I.B.A., architect, given in connection with the illustrations in our Special Issue last week, we omitted to state that the casements and leaded lights were supplied by Messrs. R. E. Pearse and Co., Ltd., of Upper Kennington Lane, S.E.

Leeds Building Strike Settled.

After lasting four or five weeks, the strike of Leeds joiners and carpenters in the building trade came to an end on December 30. Over six hundred men originally came out on strike, their initial demand being a war bonus, but when the Employers' Federation refused to grant a bonus of 2s. 6d. per week the men struck work for an advance in wages of twopence an hour. After much negotiation the men have now accepted the offer of an immediate advance in wages from 9½d. per hour to 10½d. per hour, rising to 10½d. at the end of six months.

Another British Industries Fair.

The Board of Trade have now completed the arrangements for the holding of a British Industries Fair on lines similar to those which characterised the Fair organised by them at the Royal Agricultural Hall, London, in May last year. The Fair, which will be opened on Monday, February 21, and remain open until Friday, March 3, will be held in the buildings of the Victoria and Albert Museum, South Kensington. Only British manufacturers engaged in the following trades will be permitted to exhibit—china and earthenware, glass, fancy goods, toys and games, stationery and printing. As before, admission to the Fair will be by invitation of the Board of Trade alone, and will be restricted to bona-fide buyers for the trades concerned.

Liverpool Cathedral.

The Liverpool Cathedral Committee announce that they have recently received several substantial donations, from friends who do not desire their names to be published, towards the fund necessary to avoid the loss and deterioration which would ensue on a stoppage of the work. The committee are strictly confining themselves at present to the task of covering in the building against the weather and doing work which cannot be postponed without loss. They have not thought it right to make a public appeal for funds at this time, and they are the more grateful to find that the knowledge of the difficulty in which the War has placed the building, when so nearly ready for opening, is evoking the goodwill of old and new donors to their funds, which are still much short of their necessities. The work of building naturally proceeds slowly, as all men suitable for military service have left.

THE ARCHITECTS' & BUILDERS' JOURNAL.

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SOMERSET HOUSE AND THE ADELPHI.

(From an aquatint by Farington. See page 17.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

JANUARY 12, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1097.

EDITORIAL.

A PROMINENT house and estate agent, interviewed by a representative of the "Manchester Guardian," expresses the opinion that some form of State or municipal action will soon be necessary to prevent an acute house-famine. It is impossible to imagine, he says, that, seeing the enormous quantities of building materials that will be required for reinstating the devastated territories, prices will come down to any appreciable extent, nor will rents and rates. Therefore building development can hardly be expected to proceed vigorously on the present, or, rather, on the former lines, and it would seem that the much-abused speculating builder, who is often not a builder at all, but a capitalist who employs builders, is in considerable danger of elimination. In spite of all the obloquy that has been heaped upon him, there would be much reason to regret his extinction. After all, he is enterprising and competitive, and these qualities are not conspicuous in officialdom. Whereas the speculator builds well in advance of demand, public authorities always lag a long way behind it, besides misreading its character and extent. Their habit, moreover, of building from stock or stereotyped designs does not promote architecture, nor does the innate conservatism of corporations encourage new methods and materials. It is to be wished, therefore, that State and municipal aid may be as far as possible purely financial—that the actual building will be entrusted to "outside" architects and builders, who should be backed by some sort of State guaranteed credit-bank system that surely could be easily devised for the solution of a problem that is of national importance.

* * * *

While glancing at the housing problem, it is worth while to take note of the back-to-back question, which, we notice, came up in the course of an interview between a representative of the "Sheffield Independent" and an auctioneer dealing extensively in house-property. At present, the auctioneer said, this class of property was practically unmarketable. There are, he said, large numbers of back-to-back houses which, in point of situation, state of repair, and class of tenant, are unobjectionable, and he thought it inconceivable that a sweeping measure condemning such houses could be contemplated. That is all very well as far as it goes. In the present circumstances, back-to-back houses are probably safer from demolition than they have been at any moment during the past ten years; but the evil should not be extended. It is generally agreed that this method of building is indefensible save for its cheapness, a consideration that, we trust, may not be allowed to prevail with any local authority before whom applications for perpetuating it may happen to come. To have originally permitted the building of such houses was a mistake that may be condoned on the plea of ignorance; to

tolerate their continued existence is perhaps a matter of expediency, if not of justice to the owners, who certainly ought not to be heavily penalised for a fault at which the local authorities connived; but to allow more of them to be built would be inexcusable.

* * * *

A rather surprising effect of the war is seen in the annual bankruptcy statistics as set forth in "Kemp's Mercantile Gazette." These figures should be a tonic for pessimists. In 1914 there was a decline in the number of bankruptcies as compared with 1913, and the figures for 1915 show a still further decrease: the respective totals being, in the progressive order of years, 7,191, 5,510, and 4,864. For the building and timber trades, which used easily to maintain against all comers a bad eminence at the head of the list, but now hold only the third position, the totals for the three years designated are 689, 476, and 439. In explanation of the general falling-off, the Government measures introduced for the safety of the financial and industrial position generally have been cited as the primary influence for good, with "the activity which has been imparted to nearly all trades by the huge war expenditure, and the high level of wages among the industrial classes," as supplementary influences.

* * * *

While "the activity imparted to nearly all trades" has not been fully shared by builders, it is now quite obvious from the figures that, as we have repeatedly said on several former occasions, builders have not been, as a whole, nearly so hard hit as pessimists would have had us believe, although it must be admitted that the distribution of work has been very unequal, some builders, abnormally active on Government work or on the building of factories in anticipation of the coming boom, having for their chief trouble the shortage of labour and the high cost of both labour and materials, while others are suffering from a dearth of the ordinary work that they were accustomed to do. In normal times, the bankruptcy lists were swelled by the guerilla forces of journeymen turned jobbers, entering upon the business with light hearts and lighter capital. These have had less scope for their ill-advised activities in this direction, the particular work that tempts them to destruction having subsided to zero; while, even if it had been forthcoming in normal volume, fewer journeymen would have been attracted to it, many of them—all honour to them!—finding more congenial exercise for their daring and love of adventure, while others find munition work and other highly paid labour more attractive as well as more certainly profitable than setting-up for master-builders as a "hit-or-miss" adventure.

Is there to be a revival of the rage for ruins? A project that is now in course of materialisation in Lever Park, Liverpool, would seem to suggest that it is ineradicable. Near the reservoir which holds the city water-supply, a replica of the ruins of Liverpool Castle is being built, and one must confess to sharing to some extent in the almost childish interest that the public are taking in this extraordinary performance. It is a very superior sport to building castles in the air, or even castles on the sands; and yet one cannot resist an uneasy doubt as to whether the greater permanence of the Liverpool structure is altogether an advantage. Perhaps the principal objection to it is the necessity of explaining to inquirers hereafter, when time shall have disguised its freshness, that the building is but a sham antique. Worse still is the danger that multitudes who will not inquire, but merely gape, will, when the date and circumstances of its erection have been forgotten, regard it as genuine. It is the hope of the donor that the structure "will suggest to a large number of visitors a study of the original castle and the inspiring periods of local history with which its inhabitants and associations were connected," and "this, rather than the perpetuation of a mere make-believe ruin, was the justification for all the thought and care which are being spent upon its construction." Its justification, then, is that it is a full-size model, faithfully embodying all the available data. Its æsthetic value may be inferred from the guide-book description of the original as "stern and formidable, with forbidding bastions and unpicturesque outline." Of the old castle nothing remains but its name on the street that occupies or adjoins its site.

* * * *

In one respect the changes in contemplation by the Architectural Association are regrettable. Old students, especially those serving with the colours, will, on finding themselves shut out from Tufton Street, feel a pang comparable to that which raises a lump in the throat on revisiting the old home whence one's own kith and kin have been ousted by strangers. In either instance it would be an immense relief to the emotions to chalk "Ichabod" on the newly inhospitable door and run away. But the spirit of the old home of the A.A. is not flitting very far. It will take up a temporary abode within a few steps of Tufton Street, at 37, Great Smith Street; and the plain prose of the situation is that, before the war broke out, the Association, having outgrown the old premises, had cast about for new, and, but for the war, might by now have been comfortably housed, with all its rapidly expanding activities in full process of development. As it is, the full fruition of the scheme must naturally remain in abeyance; but, in the meantime, the Association has been fortunate in disposing of the old building and in acquiring more suitable accommodation. Beyond controversy, the A.A. is doing a great educational work, and we are glad to know that its schools are flourishing vigorously, in spite of the adverse influences of the war. It would seem, indeed, that those influences are not all and wholly bad; they have, for instance, lent point and emphasis to the value of professional and technical training as the chief step towards the higher efficiency and the more stringent economy of force and resource that have become more visibly necessary to the maintenance of our standing among the nations. In this great forward movement the architectural schools should play no mean part; and apparently they are laying their dispositions accordingly.

* * * *

It is not at all surprising to learn that, in recent years, the number of visitors to the Royal Architectural Museum, which occupies nearly one-half of the available space in the A.A. building in Tufton Street, has been very small. Very few of the general

public were aware of its existence, and those few who knew of it were diffident about intruding in what seemed to them, as outsiders, the A.A.'s domestic circle; where, however, they were invariably welcomed with the most graceful hospitality. On the whole, it is much better that such casts as can be spared from the collection that will be necessarily retained for the work of the schools should go to the Victoria and Albert Museum, where they will be at least more accessible, even though the attention paid to them will be for the most part merely casual. While in many respects it is a pity that architectural objects are scattered as *disjecta membra* over so many buildings, and that the chief specific attempt at an architectural museum has had to be virtually abandoned, there is always the consolation that the wider publicity has its own particular and compensatory advantages. But the whole question of museums should come up for serious attention when, after the War, the nation can concentrate itself on the gigantic task of setting its house in order.

* * * *

By the retirement of Dr. William Garnett from his position of Educational Adviser to the London County Council, London loses the services of an enlightened educationist of unusual accomplishment. Leaving Cambridge, where he was lecturer in physics at St. John's, he went to Nottingham, and thence to Newcastle, where he helped to build up the excellent Armstrong College. As hon. electrical engineer of the Jubilee Exhibition of 1887, Dr. Garnett demonstrated the possibility of the turbo-electric generator, and it was there that he induced King Edward to take his first ride on the then novel electric tram-car. An early experiment of his has considerable topical interest. In the late 'eighties he erected a searchlight, with which he practised Morse signalling on the clouds. From Newcastle Dr. Garnett was invited to come to London as adviser to the old Technical Education Board, and under this and the committee that succeeded it he has rendered incalculable services in the organisation and supervision of technical education, which he endeavoured, with remarkable success, to establish upon a truly scientific and economic basis, with the result that feeble and ineffectual evening classes were by him re-created into well-equipped and properly staffed polytechnics, or monotronics of the type of the excellent Brixton School of Building. His energy and acumen will be greatly missed.

* * * *

If newspaper reports are to be believed, the recent great gales have been, as usual, extremely fatal to coping-stones. Reporters seem to think that anything which falls in any circumstances is, *ipso facto*, a coping-stone, even when it happens to be plastered brick-work, and no matter from what part of the building it gets dislodged. If the coping-stone proper were only half as weakly wicked as it is commonly reported to be, it ought to be abolished; and indeed, there are certain abuses of it, or of its congeners, that should not be permitted—as when it takes the form of a screen wall put up to increase the apparent height of terraced houses, when a gale confronting it may send it through the roof, or a heavy lodgment of snow behind it may force it into the forecourt. We once saw a rather long terrace uncrested by snow pressure, which effected a sufficient fall of coping-stone to satisfy the unholy appetite of the most avid reporter. Another exceedingly broad hint conveyed by the gales is that outdoor electric wires should be as much as possible kept well away from trees. On Blackheath, Kent, a falling tree brought down some live wires with it. Into these, in the dark, a young soldier stumbled, and was killed by the current. One has noticed, in rural and even in suburban districts, that trees are occasionally used as standards for the wires. Surely this is a dangerous practice.

HERE AND THERE.

IN the matter of architectural description the house agent is not to be trusted. He is a perplexing fellow, and life is surely complex enough without his adding to its riddles. We have all seen his boards in the front garden, and we have all read his alluring announcements on the printed page, and the criminal abandon in adjectives which these display affords ground for a grievous charge against the house agent. These adjectives lead to niceties of meaning which are unfathomable. We start with something comparatively easy, such as "this desirable villa," or "this delightful country house," or "this exceedingly comfortable residence," or "this well-built house," or "this attractive house," and then we go on to the higher planes of house-agent architecture. We encounter the capital house, the commodious residence, the choice residential property, the very choice mansion, the unusually choice country house, the lovely house, the ideal house, the pretty country house, the quaint old-fashioned residence, the picturesque gabled residence, the genuine old mansion, the perfectly appointed mansion, the unique property, the up-to-date house. It is all, as I have said, very puzzling. What, for instance, are the qualities that distinguish a choice house from a perfectly appointed mansion, and what in truth is a quaint old-fashioned residence? That adjective "up-to-date" is perhaps the most troublesome of all to define. As an American might say, what anyhow is an up-to-date house? Obviously no mortal less than a house agent could give the proper answer. The best explanation I can offer is, that an up-to-date house is one which is near the station and trams, has a tiled hall, a bay window in the scullery with a sink in it, electric light, company's water, main drainage, and, possibly, a crack down the front wall. Every proper-minded person will of course want to live in a house that is up-to-date. But it ought to be "quaint" as well, or at the very least "picturesque," though what these terms really mean I will not attempt to indicate. At this difficult stage in human affairs the house agent himself must be called in: for he is the author of them. Someone, I believe, contemplating an array of modern tombstones declared that the monumental mason had added a new terror to death. The house agent, with his adjectives, has added a new terror to life.

* * * *

Though a former generation could find no good word for John Nash and his stucco, we of the present will not let the housebreakers complete their work at the bottom of the Haymarket without a passing tribute to the great architect of the Regency. Perhaps Nash's supporters will hold forth from the balcony of the trim hotel at the end of Suffolk Street, or rent one of the columned tribunes from the Society of Painters in Water Colours or the neighbouring building with the oil jars. Either would form an admirable pulpit from which to address a sympathetic audience, to say nothing of the local atmosphere; for Suffolk Street and Suffolk Place, completed after 1820, are typical of the "Corinthian" age. Suffolk Street, in particular, is remarkable for the amazing architectural interest that is crowded in so limited a place, a mere cul-de-sac. It satisfies because it is harmoniously uniform in colour and texture. Portland Stone, Red Brick, Gables and Co. have not as yet taken up a site here, and long may their unhallowed schemes of rebuilding be kept in subjection. Nash knew what he was about when he designed this little street, where a piquant interest is given by the back elevation of the Haymarket Theatre—one of those delightful things which are rendered doubly attractive by being found in an almost forgotten backwater. I take off my hat to John Nash. He was a very clever architect.

UBIQUE.

INTELLECTUAL SYMBOLISM IN SCULPTURE.

IN the January issue of the "Architectural Review" there is a finely illustrated article on "The Subject-Matter of Sculpture," by Mr. H. Heathcote Statham, F.R.I.B.A. English sculptors of the earlier part of the nineteenth century, says Mr. Statham, in seeking for subjects suitable for the highest and severest form of sculpture, made the mistake of thinking that these could be found, and could be only found, in what Mr. Smee, in "The Newcomes," called "the glorious hantique"; and hence produced works which, however well executed, represented an artistic "pose" out of keeping with modern thought and feeling. That was the fatal mistake of Gibson, a sculptor of real power, which he misapplied in the production of Classic goddesses and nymphs; his only life-size nude that is of real value now is the "Hunter," which owes little or nothing to "the antique." Flaxman, the "dear sculptor of eternity" (as Blake called him), perceived a better way, and his groups and bas-reliefs illustrating moral ideas are the first things in English work which represented what should be the ideal aim in sculpture, the expression of an abstract thought through the medium of sculptured form; and for a long time they stood alone in English sculpture in this respect. French sculpture during the last thirty years or so has been pre-eminent in this intellectual suggestiveness of sculpture. The ideal example of our time is, perhaps, M. Jean-Boucher's great work, "L'Antique et Moderne," dating some ten or fifteen years back. It is only quite recently that English sculptors, some of the younger generation especially, have seemed to become alive to this power of intellectual expression in sculpture, and have given us some interesting and charming examples of it; they are, of course, only following the lead of the French in this respect, though there is always a certain appreciable difference in style between French and English work. It is rather curious, however, to note that at the same time that the English sculptors are rising to the perception of the possibilities of intellectual symbolism in sculpture, the French, on the other hand, seem to be a little falling off in that respect; not in the works of individual sculptors so much as in the more frequent production of sculpture which is purely realistic and popular in aim. Thus, two or three years ago, M. Bouchard occupied the whole width of the vast sculpture hall of the Palais des Arts with a life-size plaster model of a plough and the group of eight great oxen drawing it, as they may be seen in the agricultural districts of France. This was possibly intended to be executed in bronze for some agricultural institution; there was something fine about it, but one questioned whether it justified the space it occupied and the scale on which it was modelled. A more serious indication of the partial corruption of French taste in sculpture is to be found in the increasing number of things produced to cater for the popular interest in new inventions and discoveries—things crudely symbolical of electric lighting, electric motor-power, aeroplanes, etc. These are mostly commonplace, sometimes very ugly and absurd, and they are mere bids for popular applause. So far we have not seen anything of this kind in English sculpture, and it is to be hoped we shall not: to see it in French sculpture, which has so long been at the head of the world in this art, is rather melancholy. Sculpture has nothing to do with exploiting inventions of the hour; as remarked already, it is concerned with the essentials and not with the accidentals of life, and it has no business with attempts at popularity. Sculpture in its true sense is too severe and abstract an art ever to be popular; it is the last of the arts that the people ever learn to understand; and every attempt to be popular means lowering the standard of the art.

The "Review" for January contains also—an

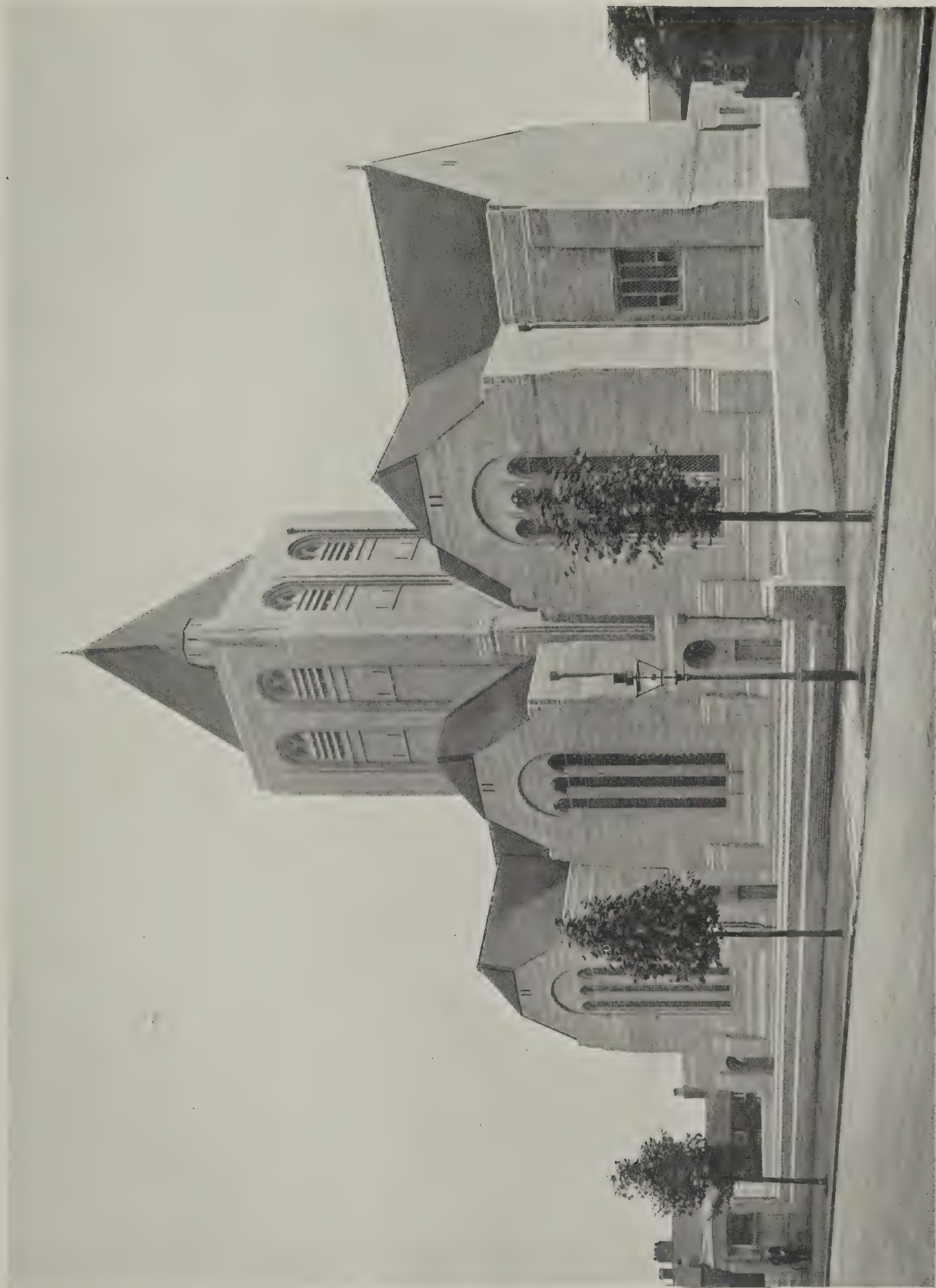


Photo : Stewart Bale, Liverpool.

CURRENT ARCHITECTURE (SERIES II.), IX.—ST. PAUL'S CHURCH, DERBY LANE, LIVERPOOL : VIEW FROM SOUTH-EAST.

G. GILBERT SCOTT, F.R.I.B.A., ARCHITECT.

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Photo : Stewart Bale, Liverpool.

CURRENT ARCHITECTURE (SERIES II). X.—ST. PAUL'S CHURCH, DERBY LANE, LIVERPOOL : INTERIOR LOOKING WEST.

G. GILBERT SCOTT, F.R.I.B.A., ARCHITECT.

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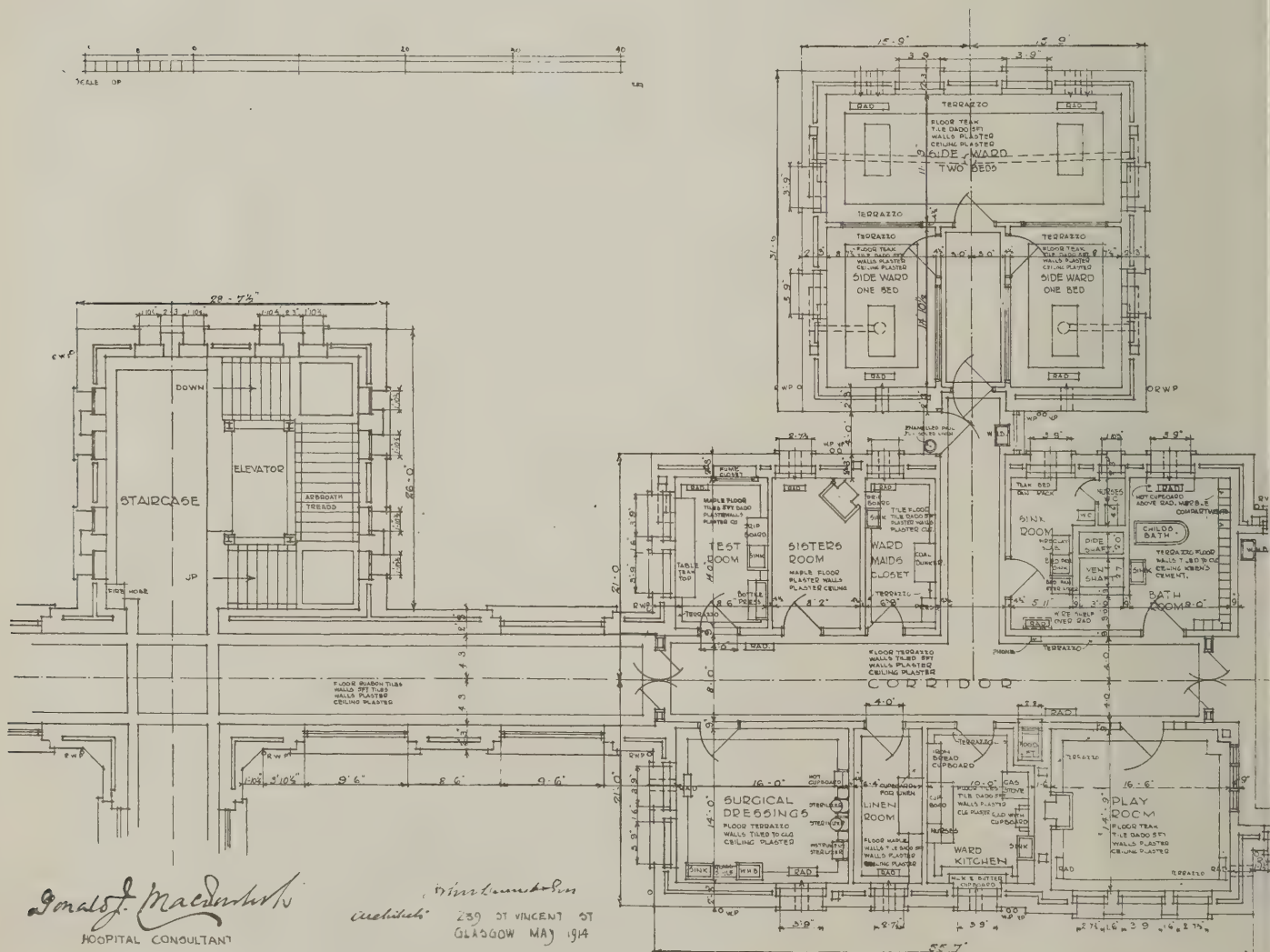
Photo : Stewart Bale, Liverpool.

CURRENT ARCHITECTURE (SERIES II.). XI.—ST. PAUL'S CHURCH, DERBY LANE, LIVERPOOL: SOUTH AISLE.

G. GILBERT SCOTT, F.R.I.B.A., ARCHITECT.

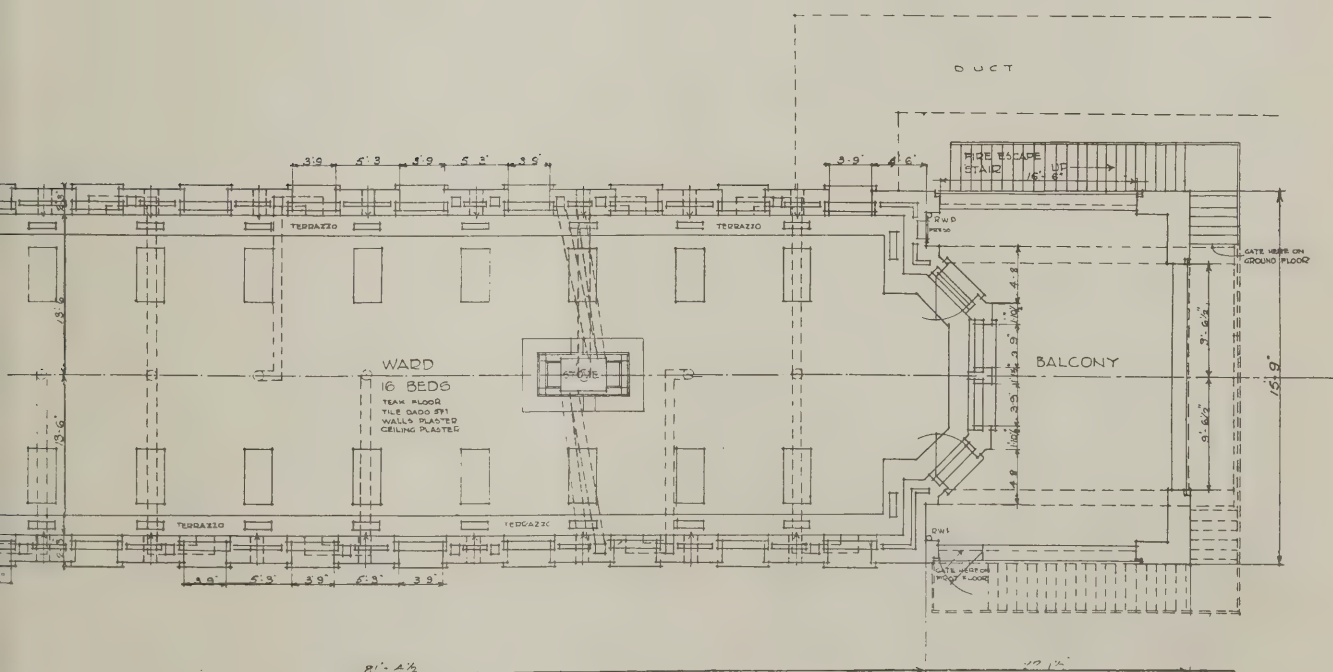
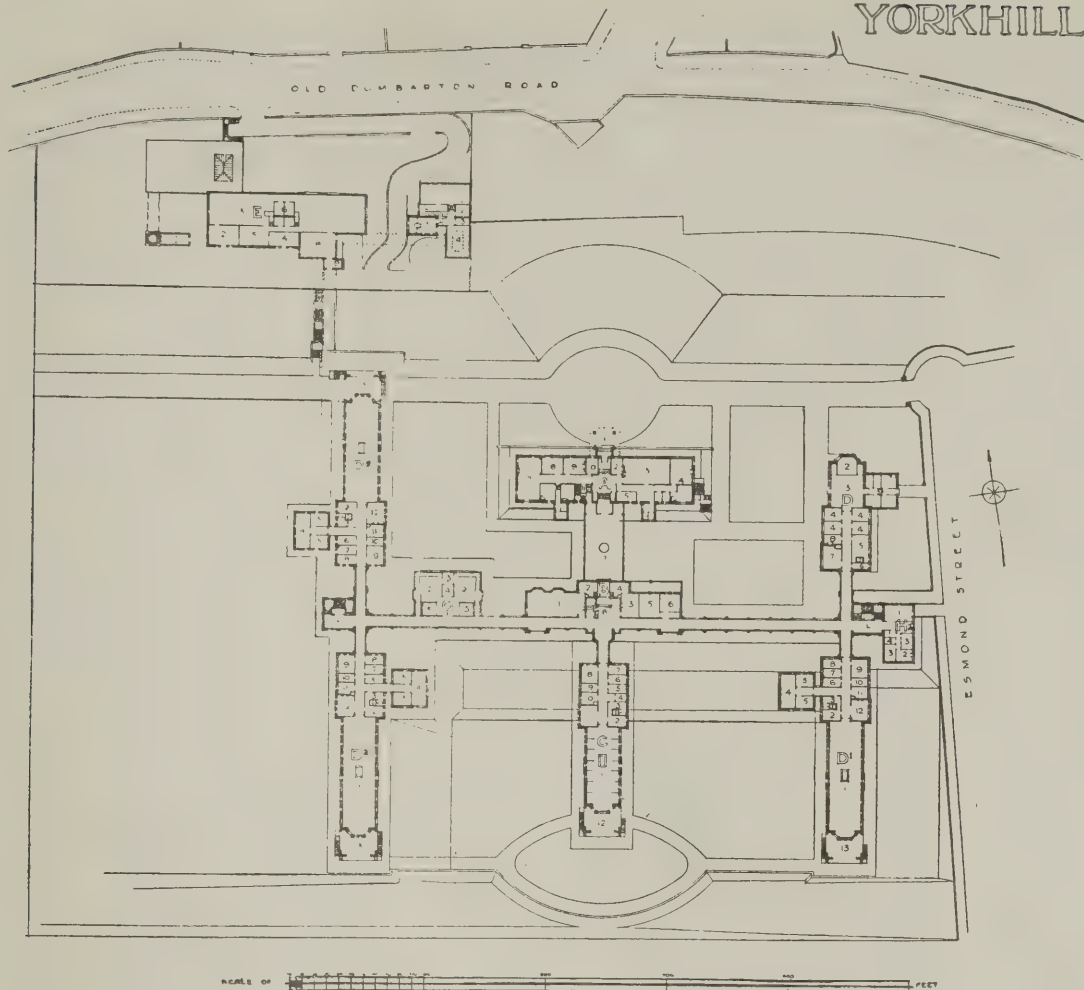
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ROYAL HOSPITAL FOR SICK CHILDREN

YORKHILL



FOR SICK CHILDREN, YORKHILL, GLASGOW: PLAN OF WARD BLOCK.

.A., AND SON, ARCHITECTS.

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CURRENT ARCHITECTURE (SERIES II.). XII.—ROYAL HOSPITAL FOR SICK CHILDREN, YORKHILL, GLASGOW : VIEW OF WARD BLOCK.

SIR JOHN BURNET, A.R.S.A., F.R.I.B.A., AND SON, ARCHITECTS.

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article on the palace and gardens of Loo; a further instalment of Mr. Francis's critical study of the Renaissance steeples of London (St. Mary-le-Strand, St. Martin's-in-the-Fields, St. Clement Danes, and St. George's, Hanover Square, being dealt with, and illustrated by some admirable photographs and drawings); an article on "Disappearing London," with two lithographs by Mr. Handlip Fletcher; an article on "A Painter's View of Architectural Detail and Ornament"; an article on "The Musta Church of Malta" by Mr. G. J. Howling (now in the Dardanelles); and reproductions of two etchings of the mills at Meaux and the church at Airvault, France, by Mr. Frank Brangwyn, A.R.A.

SOMERSET HOUSE FROM THE RIVER.

THE reproduction of Farington's aquatint on page 13 shows the river front of Somerset House, with the terrace rising boldly from the water. The present Embankment not only cuts off the building from the river, but buries the plinth of the terrace arcade below the roadway. Above the arcade the aquatint shows only the central mass of the present elevation. About fifty years elapsed before the projected east wing (King's College) was completed, and still another twenty-five years before Pennethorne's west wing was finished.

THE PLATES.

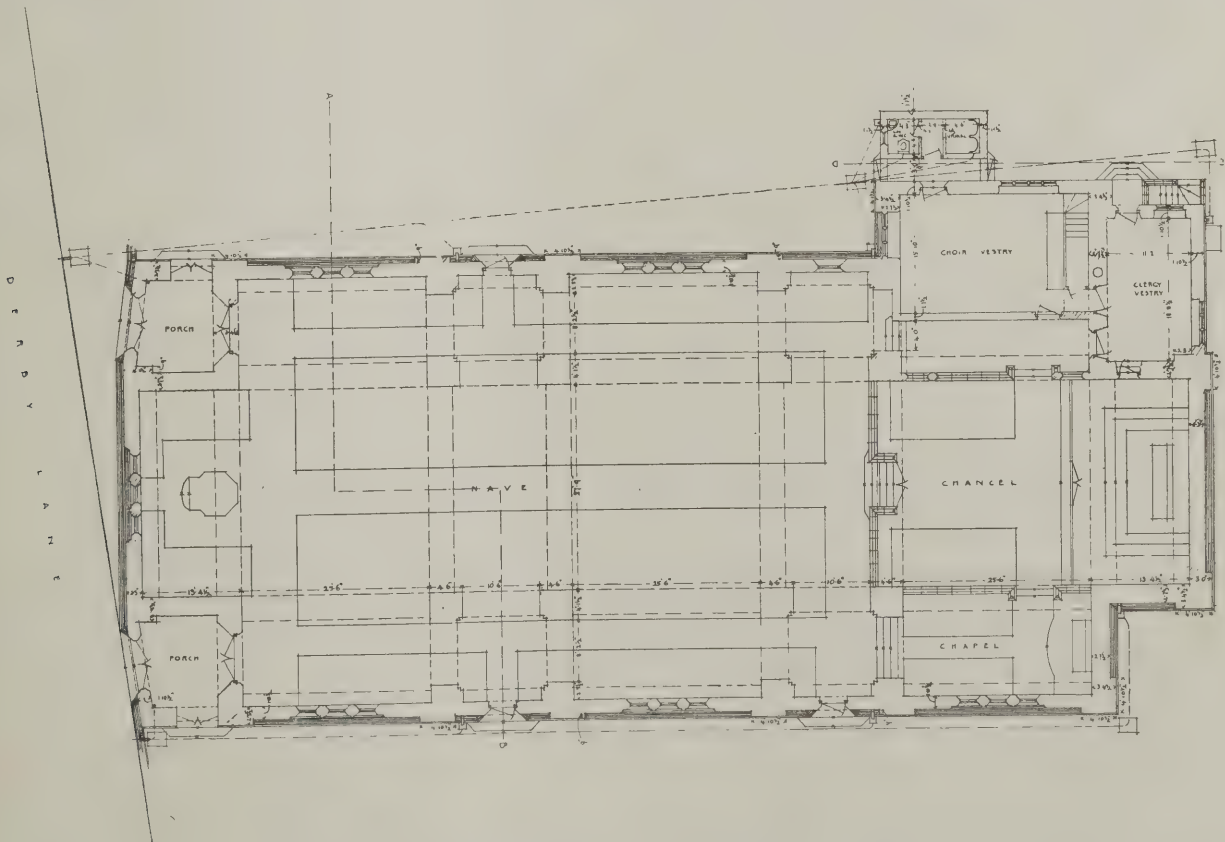
St. Paul's Church, Derby Lane, Liverpool.

IN the general design of this new church by Mr. G. Gilbert Scott, F.R.I.B.A., an attempt has been made to obtain an effect by largeness of scale and dignity of proportions rather than by elaboration of treatment. The main idea consists of three transepts on each side of the church, with a large square tower at the intersection of the central transept with the main roof. Internally, the intersection of the transept vaulting with the main

vault produces an original and striking effect, and results in the main arcade being composed of high and low arches alternately. In the transepts at each side, and in the end gable facing Derby Lane, are groups of three tall lancet windows. The principal dimensions of the church are as follows: Internal length, 142 ft. 3 in.; width of nave and chancel, 27 ft. 9 in.; total internal width (including aisles), 57 ft. 4 in.; height of nave and chancel roof, 40 ft. The tower rises to a height of about 80 ft., and is surmounted by a pointed roof, making the total height to the apex about 108 ft. Accommodation is provided for a congregation of about 640. As regards materials, externally the church is faced with small silvery-grey bricks, specially made for the work, the roof being covered with hand-made tiles. The inside of the church, including the vaulted ceiling, is plastered, with the exception of the quoins, arches, and dressings around windows and doors, etc., which are built with the bricks mentioned. Messrs. Morrison and Sons, of Wavertree, Liverpool, were the contractors.

Royal Hospital for Sick Children, Glasgow.

This new hospital occupies a breezy site on York-hill. The buildings—which are the result of collaboration between the architects, Sir John Burnet and Son, and the Board's medical adviser and consultant, Dr. Donald J. MacKintosh, M.V.O., LL.D.—comprise an administration block and nurses' home (five floors)—A on the block plan shown on the double-page plate; kitchen block (four floors), B; a ward block for nurslings (two floors), C; an admission block (two floors), D; three ward blocks (one of two floors and the other two of three floors), D¹, D², D³; boiler house and laundry block (two floors), E; mortuary block (three floors), F; operating theatre block (two floors), G; residents' block, H; all connected by covered corridors or subways. In the operating theatres the newest system of artificial illumination is adopted; there are no lights actually in the theatre, arc lamp projectors being installed in an adjoining chamber and the beam of light being projected through a glazed



ST. PAUL'S CHURCH, DERBY LANE, LIVERPOOL: PLAN.

aperture in the wall on to adjustable mirrors, which throw the light down on to the operating table. Heating is hot water on the "Reck" system, by means of which the circulation is accelerated and the water heated by low-pressure steam. The extent to which electricity is now employed in a modern hospital is strikingly exemplified at this institution. Artificial illumination is provided for by nearly 2,000 metallic filament electric lamps. Thirteen lifts and the whole of laundry, kitchen, and other machinery are operated by electric motors, of which there are, in all, upwards of forty. The clocks throughout, about thirty, are electrically operated and controlled, as also are the several bell systems; while, in addition to these ordinary utilitarian services, there is the very extensive and varied use of electricity in electro-surgery, Röntgen ray, high frequency, and other special apparatus. The sub-contractors included Messrs. Jas. Boyd and Sons, Paisley, heating; J. and G. Tullis, Glasgow, laundry plant; Waygood and Co., London, lifts; Sterling Telephone Co., London, telephones; the Magneta Time Co., London, electric clocks; Telford, Grier, and MacKay, Glasgow, general electrical equipment. The consulting and advisory electrical engineers to the Board were Messrs. James E. Sayers and Caldwell, M.I.E.E., of Glasgow.

Plaster Enrichments.

These are some further examples from the collection of original "Georgian" moulds in the possession of Messrs. George Jackson and Sons, Limited. There is nothing we can add to what we have said by way of comment on other examples in the series; the grace of the work speaks for itself.

Drayton House, St. Margaret's.

This may be regarded as an example of the "last flicker" of the Georgian, then to be superseded by the Greek Revival of the early nineteenth century. The projecting porch, with its Ionic pillars, is especially suggestive of the coming change. Despite, however, the element of severity which pervades it, the design preserves the human interest; it is still a house, not a transmuted temple front, as some of the later houses became; and its carefully studied proportions make it a very satisfactory composition.

CHURCH RESTORATION IN 2015.

THE subject of restoration is one of perennial interest. Opinions on what is right and what is wrong in restoration are as varied and conflicting to-day as they have always been. Nevertheless, it is profitable to continue to state the various points of view, in the hope of some general consensus of opinion being arrived at, and it is with that idea in our mind that we give the following extract from "An Essay on Restoration," by Mr. Harold S. Squirrell, which appears in "The Month":—

Presently, when the war is over, we shall begin to feel our wounds more acutely. We shall have time to grieve over the pitiful destruction of monuments that we are unable to reproduce. We shall look about to make good our losses, to restore and reconstruct: it is then that we shall meet with problems as great in their way as any we have met. One sees, as in an evil dream, the façade of Rheims Cathedral, the shattered statues replaced by brand-new ones in white or yellowish stone, hard in outline, executed as if by a cleverly-devised machine, like most modern work of the kind. Imagination pictures a new Cloth Hall at Ypres, very neat and clean, with insertions of old work like pieces of old cloth in a new garment. If we have seen the new Campanile at Venice we know what to expect—what to fear. One trusts that the best talent of the world

will be summoned in consultation, that there will be much patient thought. What can we do—those of us who care—but think the thing over quietly for ourselves, talk about it together and hope for the best? Emboldened by this consideration, I write down the following daydream.

It is the year of our Lord 2015. There has come into my possession, it matters not how, a wonderful old church dating from the fourteenth century. For long it had been unused, like so many other old churches in England, has stood forlorn, given over to bats and tourists. It has been appreciated by many as a thing of beauty; archæologists have read its stones; it has been protected from destruction, as every old and beautiful building is protected now; but it has stood like a thing dead, a monument to an age dead and gone. And now it is mine: I can do what I like with it, save disfigure or destroy. I am not of course free: the committee of artists and architects appointed to decide questions of the kind are coming to-morrow to tell me what I may do, to advise me what it will be best to do. I want to restore my church to the worship of God; I want to make it glorious again in colour, to fill its windows with stained glass, to rebuild its rood-screen, to make it again what it was in the zenith of its mediæval splendour. . . .

The experts came: I saw their air-ship approach, a deep blue bubble against the paler, luminous sky. I welcomed them and led them to my church. They wandered round its walls with note-books, singly and in twos and threes. Then they entered: I found them later sitting in quaint attitudes, scattered about the building. After an hour or more I led them to my house. We lunched, and after luncheon sat smoking cigarettes in the covered court.

"I don't like the gold-fish you have insinuated between God's sunlight and yourself," remarked one, with uncalled-for candour. I am proud of my aquarium, fitted to fill the whole of a large window: it gives to my court a feeling of wonder-world. I pondered on the rudeness of experts and wondered why they generally lack good manners. I looked for consolation at a clump of bluest anchusa, growing beside the fountain in the middle of the paved floor; then my eyes wandered to the little silver fish, flashing in the fountain-pool. "The arrangement seems unnatural," he continued; "and the poor fish must get boiled when the sun is strong." "There's a blind," I said, "and there is always a shady place."

Presently I ventured to ask questions about my church. "What do you want to do?" questioned the president. I spoke of stained glass, a rood-screen, timidly of frescoes and a carved altar. The experts groaned. "Better pull it down and build a new church," said a voice. "Anything new you put in will be a patch. No one living can reproduce old glass; no one can give you an old screen. Preserve what you've got: don't patch." "But I want to use my church for God's worship," I cried. "Use it; but keep it beautiful," a young man said. "You've got a glorious church that takes one back seven hundred years. Nature has painted it for you. Make it water-tight, clean it carefully, carry in altar-hangings and furniture and rugs designed by someone who knows—beautiful colour. Don't touch a stone. Preserve." "Put new lead on the roof," I suggested. Horror became depicted on every face. I felt like a criminal. "New lead!" "But the old is slipping off," I suggested. "Stop it. Pour something under it—one of those preparations so many of which have been invented since scientific men turned their energies away from making engines of destruction. Make the roof watertight by all means: don't destroy your beautiful lead covering." "Why not coloured glass?" I questioned. "We can make beautiful glass."



DETAILS OF CRAFTSMANSHIP. XLVII.—PLASTER CASTS OF "GEORGIAN" ENRICHMENTS.

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SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II). XVIII.—DRAYTON HOUSE, ST. MARGARET'S, MIDDLESEX.

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"We can make beautiful glass, but we can't make old glass, and anyone would be able to see it was new. We train our children's eyes to see these things now, instead of stuffing the poor little beggars' brains with mere facts and only facts. Think what they did in the nineteenth and early twentieth centuries in the way of restoration, and weep over it." "Why not fake a bit?" I suggested. "A rood-screen and loft, painted to look old. We could do it." "I doubt whether we could do it; and if we could, it wouldn't stand the test of time. I can't imagine your screen and loft looking the real thing. If it looked it the day it was finished, it wouldn't look if fifty years later."

They visited the church again. When they left, towards evening, the president said: "We will send you a written report a few days hence."

I watched the blue oblong bubble, adorned with a great crimson dragon, getting smaller and smaller in the distance, dark against the pale blue sky. Then I went back to my church. I sat down on one of the old oak benches, far back in the nave. Presently the setting sun, shining through the west windows, dyed pillars, walls and floor with patches and streaks of gold. Mystery grew. I went back through the years in dreams.

What splendid confidence every age had in itself! The Norman replaced the Saxon work, the Early English the Norman. No one reproduced the round arch after the pointed had been devised: much Norman work was left; much was destroyed; it was never copied. Then came the fourteenth century with its beautiful Decorated work. It had the same

confidence in itself: reverence for past work was unknown: it never copied. A hundred years later a new style: the Perpendicular. Some of us feel inclined to shed a tear or two: we feel that a falling off is here. We like not to think of the smashing out of incomparably beautiful tracery that there might be more light and straight lines. Even when we think of wonderful glass we like it not. We do not like even a greatly glorified greenhouse: perhaps we have felt insecure and a sense of fairy palace rather than church amid the glory of the glass of the Sainte Chapelle. But the Perpendicular of the fifteenth century was splendidly self-confident: it scorned to reproduce: it destroyed ruthlessly. It has left us splendid work too. Especially do I thank it for its wood-work: screens, font-canopies, hammer-beam roofs, pulpits, benches and the rest. It was great and strong and it loved colour. We have never seen any old church as its builders saw it. We have never seen a Perpendicular church in its full splendour: a palace of much stained glass, of much gilded and painted wood-work. . . .

When did confidence decay? Taste decayed we know, and when we know. Jacobean were confident and Georgians: it must have been Victorians who lost heart. They instituted the Gothic revival, wrought much mischief and some good, and possibly they began to discover reverence for work of the past. Now in this twenty-first century we are splendidly confident again: we have a style; but we have not lost reverence. . . . "They are right," I said to myself. "We can patch: we can never restore. I will do what they advise; nothing else."



Photo: Stewart Bale, Liverpool.

ST. PAUL'S CHURCH, DERBY LANE, LIVERPOOL: INTERIOR LOOKING EAST.

G. GILBERT SCOTT, F.R.I.B.A., ARCHITECT.

PRELIMINARY CLAUSES FOR SPECIFICATIONS.

ALTHOUGH it is difficult to add anything further to what has been already said by various authorities on the subject of specification writing, yet there are one or two suggestions that can be made with regard to the Preliminaries that precede a good specification. These Preliminaries consist of a number of separate statements appertaining generally to all the different trades, and are often overlooked by the builder when tendering.

If they are to be of any service, all Preliminaries ought to include a résumé of the General Conditions of Contract. Needless to say, the majority of contractors have not time to peruse this important document, whilst in some cases it has been known to strike terror into the heart of a new builder unused to contracting. I would suggest, then, that the Preliminaries should contain, besides all the usual matter, other items (taken from the conditions) for which the contractor will need to include a price; otherwise, if he has not time to read the conditions, he can never send in a tender fair to himself.

The first clause in the Preliminaries ought to begin with a clear description of the contract. A few words will suffice if the contract is for the erection of an entirely new building; but in the case of alteration to existing premises a mere title is not enough. It will help the contractor very much, and save him time and trouble, if a clear description is given of the work to be done.

Suppose the contract consisted of an addition and alteration to some hotel, the clause for this might read:

Description of Contract.

"The contract consists of building thirty additional bedrooms, extending coffee room, new bathrooms on second and third floors, new pantry, dispense, service, and lifts on south side of hotel, new garage, petrol store, altering existing garage, all in accordance with this specification and drawings numbered No. 1 to No. 16, together with any further drawings and instructions given from time to time by the architect."

The next item in the Preliminaries should state the time within which the contract is to be completed. The following clause will be found useful:

Time for Completion.

"The whole of the work to be completed within.....from the date of signing contract."

As an architect is not always familiar with the by-laws of the local authority within whose jurisdiction the contract is carried on, it is wise to insert a reminder that the responsibility of conforming with them rests with the contractor. The following clause will also remind him to allow in his tender a sum of money that will include any expenditure involved:

Local By-Laws.

"Give all necessary notices, pay all fees legally demandable and conform with the by-laws of the local authority."

It is always a wise precaution to draw the contractor's attention to the Articles of Agreement he will be called upon to sign, a copy of which should accompany the plans. He has then no excuse, after sending in his tender, for pleading ignorance of certain stipulations therein expressed. The following clause will be found useful:

Articles of Agreement.

"Comply with all the stipulations set forth in the Articles of Agreement, Conditions of Contract, etc."

Water.

"The contractor to provide all water. The nearest supply is at"
(Follow with particulars.)

The above clause is especially necessary in country districts where the supply is limited, and its precise location is helpful in preparing the tender.

The contractor's attention should be drawn to the insurances. The following clause will serve this purpose:

Insurance.

"The contractor to insure the building against loss or damage by fire (see clause No. General Conditions)."

"The contractor to insure his men and be responsible under the various Acts of Parliament and satisfy all claims for compensation against injury (see clause No. General Conditions)."

The question of net measurements is always debatable. In wrought timber it is usual to allow something off for dressing. If the architect intends that all timber shall hold the specified sizes, it is best to mention it in the following clause:

Net Measurements.

"All sizes mentioned in the specification are to be taken as finished sizes."

It is tedious in a specification to be always repeating the words "provide and fix." Yet if only the word "fix" is mentioned, the contractor is at a loss to understand whether he has to provide the article also. The following clause will make the intention clear:

The Contractor to Provide all Material.

"The contractor to provide and fix all material as specified except where the words "provide only" or "fix only" are used.

To remove all doubts as to the meaning of "prime cost" it is best to draw the contractor's attention to it. The following clause should be inserted:

P. C. Sums.

"All prime cost (P. C.) values quoted are to be taken as exclusive of all trade discounts, and all invoices of such items are to be produced at the architect's request."

After the contractor has agreed to carry out the work for a certain sum of money, he has no right to charge travelling expenses for any of his men on the occasion of any extra work that may be ordered if he has submitted a schedule of prices. The following clause will cover this contingency:

Travelling Expenses.

"No travelling or other expenses will be allowed to the contractor or his men during the contract and term of maintenance, as they will be regarded as having a local habitat, notwithstanding any rules in connection with their trade to the contrary."

The following clause relating to maintenance of work and reinstating all defects with new after completion of contract is too important to be neglected, as time alone in some cases shows up any defects previously unnoticeable. The contractor should add a sum to his tender for this:

Maintenance.

"Include for maintaining works and making good all defects for a period of

six months after completion of contract (see Clause No. General Conditions)."

In all large contracts conveniences for workmen must always be provided. The following clause will remind the contractor to consider this in the tender:

Conveniences.

"Provide satisfactory conveniences for the use of the workmen, to be kept clean by daily attendance and cleared away after completion. No workman will be allowed the use of any w.c. on the premises."

Usually, with a large alteration job, many problems as regards mode of procedure that have been overlooked by the architect will assert themselves. When a contractor sends in a price, he bases his tender on the general assumption that the progress of the contract will proceed smoothly and easily. But suppose that, after the contract has been signed and operations have begun, the tenant, say, of business premises that are going to be altered, lodges complaints against the contractor, objects to workmen using the corridors or staircases, or insists on having portions screened off so as to prevent the dust from penetrating into the existing building. Or, again, in the case of alterations to an hotel, he may object to having guests disturbed by noises at an early hour. If such contingencies have not been recognised in the contract, then the contractor is at liberty to demand an "extra," not only for the cost of erecting temporary screens, but also for loss of time to his men in having to gain access by another way.

To meet such cases, the following clause should be inserted:

Temporary Screens.

"Erect temporary dust-proof screens in corridors during the performance of the contract. The screens to be from floor to ceiling in each case, and allowing 3 ft. clear working space from face of interior wall to screen. After the work is completed remove same, and make good all damage and defects."

Disturbance.

"No knocking or hammering will be allowed on the walls before 8 a.m. or after 6 p.m. by the contractor or his men."

Delivery of Materials, etc.

Again as to the delivery of materials: "The contractor will be required to deliver his materials and confine his operations within the space set apart for his use. The whole of the materials will have to be brought into the building by way of the scaffolding, as nothing will be allowed to be brought through the premises."

"No workman will be allowed along the corridors or on the staircases. The contractor to arrange for the removal of debris at such time as will be most convenient, and in no case must the convenience of the public or servants be interfered with."

If the sphere of alterations is in such a position that the public are in danger from falling debris, then it falls to the architect to provide efficient means for its protection. If this is neglected the public, if injured, can claim damages. The following clause should be inserted:

Barriers, Protection, etc.

"The contractor to fix all barriers, lights, notices, etc., and erect and maintain an efficient hoarding 7 ft. high,

having gate, lock, covered footway and handrail, all in accordance with detail No....., and to the satisfaction of local authority. No posting of bills or notices will be allowed on hoarding or about site without permission from the architect."

If a staging has to be erected over which the material will have to be delivered, and this is over an entrance or veranda, the following clause should be inserted, together with a reference to a detail drawing for same:

Temporary Staging.

"The contractor to erect and maintain a temporary staging, having bearers and cross-bearers, sizes as shown. Bearers to be let into wall and wedged, or carried otherwise on braced and ballasted posts, as the case may be (*see detail drawing No.....*), cover the staging with $2\frac{1}{2}$ in. planking $\frac{1}{2}$ in. apart. Include for a suitable handrail round staging carried on strong posts."

As the staging should remain in position until the last workman has finished, the architect should add the following to the above clause:

"After written permission has been obtained from the architect at the completion of the contract, take down the whole of the staging, boarding, etc., and make good all put-log and other holes, paving, etc., and make good all damage."

The attention of the contractor is drawn to the existence in the General Conditions of Contract of the following clause:

Conditions of Contract.

"The contractor is to peruse the General Conditions of Contract herewith appended, and include in his tender for any expenses arising out of the stipulations and clauses not mentioned above."

With regard to the preliminary clauses preceding each separate trade, their attention should be likewise drawn to the General Preliminaries, etc., as follows:

General Conditions.

"The contractor is referred to the General Preliminaries, General Conditions of Contract, all drawings, site, etc."

If an architect is not quite certain of the nature of the ground about the site of a new building, and wishes to save on the depth of his foundations, it will be useful to add the following clause to the usual Preliminaries of the first trade:

Variation in Foundations.

"Should the foundations in execution be carried to a greater or less depth than that shown upon the plans, the difference in value as ascertained by measure, priced out at the schedule rates, will be added to or deducted from the contract sum as the architect may direct."

It may be objected that the recommendations mentioned above are too stringent, but long association with contract work of this character has demonstrated to the writer that these clauses are absolutely necessary if the architect is to protect his client and himself, and be fair to the contractor.

In contracts, such as alterations, say, to some railway station where the service has not to be interfered with, temporary working arrangements have to be planned not only to minimise as much as possible the inconvenience to the public, but also to protect from injury the public and the company's servants. It should be observed that a contract carried on under such conditions of course adds to the cost, because not only are the special arrangements to be paid for, but the speed at which the contract can be carried on is necessarily reduced.

The planning out of the temporary arrangements necessitates the drawing of special plans called "Plans of Procedure." These are numbered and coloured in such a way that their meaning, in conjunction with the specification, can be readily interpreted. The plans include the designing of special covered ways and staircases and elaborate scaffolding, all of which, in some cases, has to be removed and re-erected elsewhere between sunset and sunrise.

In some cases the services of watchmen to warn workmen who are busy near any running line have to be included in contracts.

Obviously it is impossible to exhaust the subject of Preliminary clauses. Additions or omissions can be made from general or special experience; but it is better to err on the side of having too many rather than too few, because contractors are sometimes very keen on obtaining "extras," and will take advantage of any loop-hole a weak specification affords, and no architect with a due regard for professional etiquette would take advantage of his own omissions.

J. E. REID, Licentiate R.I.B.A.

HUDDERSFIELD'S HOUSING PROBLEM.

The housing problem has become acute at Huddersfield, where British Dyes, Ltd., have chosen a site for the establishment of their undertaking, which, it is hoped, will go far to make dye-users in this country independent of German supplies. For some years the rate of building of dwelling-house property has not kept pace with the ordinary increase of population, due to the steady growth of industries. Particularly has this been the case in the Colne Valley, where for some years the low-woollen and tweed manufacturing industry has had remarkable prosperity. Now, in addition to the needs of the other new or expanding industries provision must be made for the 20,000 or 30,000 workpeople who will be employed by British Dyes, Ltd.

The initial efforts of the Huddersfield Corporation to provide working-class dwellings have been almost entirely confined to the substitution of tenement dwellings to make up for the gradual condemnation and closing of the many cellar dwellings. Since the passing of the Housing and Town Planning Act various schemes have been carried out and others have been begun—notably the purchase of the Royds Hall estate, at Paddock—but their completion has been delayed by the war. Recently newcomers to the town have been advertising in the local press offering money rewards to anyone who will discover an empty dwelling-house.

The corporation have now to consider how to make good the undertaking which they gave to British Dyes, Ltd., that if Huddersfield were chosen as the site of the new works they would endeavour to provide adequate housing accommodation. A special committee has been appointed to report on the matter and to secure, if possible, special grants from the Government on the ground that British Dyes, Ltd., is an urgent national undertaking. It is possible also that, in accordance with a suggestion made by the Mayor, the building societies may co-operate by lending money.

In the meantime thousands of labourers engaged in the construction of the new works have had to be provided with huts by the company and the lodging-houses are full.

BUILDING IN IRELAND IN 1915.

Reviewing the past year, "The Irish Builder and Engineer" says: "In Dublin the new Government offices in Merrion Street have been in progress, and one section approaches completion. The new buildings of University College, Dublin, have also been continued, and it is expected that the Departments of Physics and Chemistry will be completed for occupation by May 1 next. A large new convent at Kill-o'-the-Grange, Co. Dublin, has been begun. A few business premises, of which the most important is, perhaps, Messrs. Lafayette's new premises in Westmoreland Street, have been built, as well as one or two new picture theatres. The new Coliseum Theatre was opened. In the South Dublin Rural District an extensive scheme of labourers' cottages is in progress. Municipal building enterprise has been stopped, but the Corporation have borrowed £24,000 and intend to expend it upon building working class dwellings.

The Government legislation of the past ten years and excessive local taxation had already practically killed speculative building enterprise.

In the South there is not much in progress. The splendid new offices of the Munster and Leinster Bank in Cork, one of the finest modern buildings in Ireland, have been finished, and a new chapel for University College, Cork, is in progress. One or two public libraries in Munster are projected or in course of erection.

In Connaught several important building contracts were about to be begun before the war, but have been abandoned. In Sligo a very large convent, the cost of which may ultimately run to £60,000, is to be built; in Co. Galway a sanatorium; at Newport, Co. Mayo, a large new church has been begun, as the result of a bequest of £10,000 towards the project; and new churches have been almost finished at Balla and at Straide, Co. Mayo. The tower and spire of the new church at Roscommon is in course of completion.

The great work of church building in Ireland, which had been for so many generations a mainstay of the building trade, and has for several years been declining in value, has still further lessened as a result of the war.

The loans under the Labourers' Acts, which for thirty years have financed our rural housing, have ceased for the period of the war at all events, though isolated schemes of housing are in course of completion here and there.

CARPENTERS' COMPANY LECTURES.

The Worshipful Company of Carpenters have arranged for the following ten lectures to be given at their hall, London Wall, on Wednesday evenings from February to April, at 7.45 p.m.:

February 2.—Mr. Lawrence Weaver, on "Memorials and Monuments."

February 9.—Mr. Arthur Gardner, on "Sculptures of Rheims Cathedral."

February 16.—Mr. William Strang, on "Some Movements in Modern Art."

February 23.—Mr. Arthur Keen, on "The English Roof."

March 1.—Mr. D. S. MacColl, on "The Work of Alfred Stevens."

March 8.—Mr. W. Robert Colton, on "The Effect of War on Art."

March 15.—Mr. H. J. L. Massé, on "Seals."

March 22.—Mr. H. Hughes-Stanton, on "Landscape Painting."

March 29.—Sir Krishna G. Gupta, on "Indian Building, Ancient and Modern."

April 5.—Mr. William Dawson, on "British Forestry before and after the War."

COMPETITION PRACTICE IN AMERICA.

Among the reports presented to the forty-ninth annual convention of the American Institute of Architects, held at Washington in December, was one on competitions. A suggestion had been made that all competitions should be divided into three classes, based on the cost of the work, the class covering work costing less than £10,000 to be exempt from Institute provisions at the discretion of the Chapter. This suggestion was rejected on the ground that the principles laid down by the Institute are fundamental and apply to all competitions. A second suggestion was that the professional adviser must be a practising architect of highest standing. Inasmuch, however, as many men not practising are believed to be entirely competent to act in an advisory capacity, this suggestion was rejected. The report further states: "It was proposed to change Article VIII., permitting the adviser to judge competitions for work costing less than \$150,000 (£30,000) and requiring a jury of three or more for larger work, all of whom should, and a majority of whom must, be practising architects, and making the adviser eligible for such service. The Standing Committee reaffirms its belief that a jury should consist of men having no information before them other than that given to the competitors, and that the judgment, being the selection of an architect, should be rendered solely on the basis of the use made by the several competitors of the information before them. An adviser has gone over the problem with the owners at great length, and has much collateral information which never gets into the programme and which it would be unfair to apply to the judgment, especially as it is quite possible that one or more of the competitors may have similar information obtained before a competition was decided upon, while the other competitors have only that in the programme, while there is the further possibility that the adviser has, by the time of the judgment, arrived at a solution of his own which might prejudice his judgment. With reference to the personnel of the jury for larger work, your committee believes that the owner, an architect, and an expert on hospitals, libraries, apartment houses, or whatever the work in hand might be, would be a competent jury, and a sufficient guarantee to the competitors."

REGENT PALACE HOTEL, PICCADILLY CIRCUS.

In the article on the Regent Palace Hotel in our issue of December 20, reference should have been made to the ventilation work, which is an interesting feature of the building. More than 50,000 duct blocks were used in this service, these being made on a "Winget" machine. The sizes of the blocks were 12 in. by 9½ in. and 13 in. by 8½ in. by 9 in., with 10 in. by 6½ in. core holes for single flues; and 17 in. by 12 in. by 9 in., with two core holes, with a division web 1 in. thick for the double flues. All internal corners are round to 1¼-in. radius, and no rendering was required on the inside, the surface obtained in the machine being perfectly smooth. All the blocks were made with a clinker aggregate, and special bevelled members were provided for gathering-over where required.

The partition slabs for the internal

walls were also made on "Winget" machines. The concrete blocks and slabs were supplied by Messrs. A. and S. Wheeler, 20, Abchurch Lane, London, E.C.

OBITUARY.

Mr. Harry Hems.

We regret to announce that Mr. Harry Hems, the well-known church carver of Exeter, died last week, aged seventy-three.

His early years were spent at Sheffield, where he became a cutler. Later he took up wood-carving, and by dint of talent, abounding self-confidence, and perseverance, made astonishing progress. After about a year he found himself a foreman carver at the renovation of Higham Ferrers Church, Northants. He afterwards worked on many important churches and public buildings throughout the United Kingdom. For the extension of his knowledge and craft he went to Italy



THE LATE MR. HARRY HEMS.

to study the work of old masters, and obtained employment in studios in Carrara and Florence. Not only did he find the pay small, however, but the political condition of Italy at that time was not very restful, and his adventures included arrest and imprisonment as an alleged Garibaldian spy. When he was released he tramped back to England, and made his way to Exeter in 1866, being then twenty-four years of age. He used to say that emerging from St. David's Station he stumbled upon an old horseshoe, which he picked up "for luck." That horseshoe he always retained, and when after many years he built business premises in Longbrook Street, he had it gilded, and gave it a place of honour in the front of the main building. In 1867 Mr. Hems began that strenuous career which made his name so familiar. In the city of his adoption he built up a business as ecclesiastical sculptor and wood-carver which was known throughout the world. He threw himself into local controversies, and with a nimble, trenchant, witty pen set about his critics and opponents with merciless vigour. He was also a frequent contributor to the technical papers connected with his craft, and never lost an opportunity of getting his name and his views before the public. During a period of thirty or forty years it was said of him that he wrote more signed articles upon technical and general subjects than any single man living. Among the most noteworthy of his

works of carving was the restoration of the high altar screen at St. Alban's Abbey, the contract price for which immense undertaking was £10,000. Mr. Hems also took a large share in the embellishment of St. Louis Cathedral, where a large reredos stands as a monument to his handiwork. Other specimens are at Brisbane, Chicago, and practically all over the world. Mr. Hems was elected a member of the Royal Archaeological Institute about 1880, and in 1884 became a member of the Society of Architects.

Mr. W. H. Lynn.

Mr. William Henry Lynn, R.H.A., architect, of Belfast, who died on September 12, left personal estate which has been valued at £68,681.

Lieut.-Col. J. F. Greenwood, F.S.I.

Lieut.-Col. J. F. Greenwood had practised as an architect, and was a Fellow of the Surveyors' Institute. He was gazetted an honorary lieutenant-colonel as a corollary of his appointment as Superintending Inspector of Works on the R.E. Staff.

NEWCASTLE ASYLUM.

The last of the buildings forming the recent extension of the Newcastle City Lunatic Asylum have just been handed over to the War Office authorities. The new buildings comprise two villa blocks for forty patients each, a home for fifty-six nurses, and an isolation hospital for six patients. The villa blocks have brick walls with a ½-in. cavity behind the outer facing filled in vertically with Callender's "Bitubond." The walls of the nurses' home and the isolation hospital are of stone. All roofs are covered with Port Dinorwic slates, floors are on Fawcett's "Mon'lithcrete" system, the plastering is with "Victorite," except in the hospital, where "Albino" cement is used. The ground floors are of pitch-pine boards and upper floors have deal blocks. Heating is by hot water with radiators and pipes. The bathrooms, lavatories and w.c.'s have "Marmette" dados and floors of "Flin-tine" tiles. The stair steps and landings are of Yorkshire stone from Messrs. John F. Shackleton and Son, of Goole. Internal partitions are of Hemel Hempstead partition blocks. The upper windows of the nurses' home have sashes hung on Hall's pivots. The general contractor for the building was Mr. Alexander Pringle, of Gateshead, the various sub-contractors being: Slating, Beck and Son, Newcastle; plumbing, Allinson and Son, Gateshead; plastering, W. Ryan, Gateshead; painting, Merrilees and Denton, Gateshead; heating engineers, The R. J. Ward Co., Newcastle; radiators, National Radiator Co., Hull; wood-block floors, E. Burgess and Co., Liverpool; and Turpin's Floor Co., London; sanitary fittings, Doulton and Co., Ltd., Paisley; fires and mantles, Doulton and Co., Lambeth, Emley and Sons, Ltd., Newcastle, and Henry Walker and Son, Ltd., Newcastle; iron balusters and railings, M. Aynsley and Sons, Ltd., Newcastle; asphalt roads and paths, W. T. Wallace, Newcastle; mosaic dados, The Art Pavements and Decorations, Ltd., London; electric light, telephones, and tell-tales, Robson and Coleman, Newcastle; boot lockers and racks, The Crittall Manufacturing Co., Baintree; fire hydrants, J. Blakeborough and Sons, Brighouse. Verandah coverings are of Pilkington's wired-cast plate glass. The buildings have been designed and the erection superintended by Mr. John W. Dyson, architect, of Newcastle.

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NEWS ITEMS.

Architectural Decorators to the King.

The King has been graciously pleased to grant to Messrs. H. H. Martyn and Co., Ltd., a warrant of appointment as Architectural Decorators to His Majesty.

"Royal Academy Illustrated."

The Council of the Royal Academy have decided to issue their own publication, "Royal Academy Illustrated," next May. Most of the reproductions of pictures will be in photogravure.

Proposed Sanatorium, Preston.

Preston Town Council, acting on the advice of the Local Government Board, has postponed indefinitely the project of building a tuberculosis sanatorium; but, also on the advice of the L.G.B., has purchased a site for it at Ashley Hall Farm.

L.C.C. Regulations for Reinforced Concrete.

The regulations with respect to the construction of buildings wholly or partly of reinforced concrete, which were made by the London County Council on July 6 last, came into operation on January 1. Copies can be obtained from Messrs. P. S. King and Sons, Ltd., 2 and 4, Great Smith Street, Westminster, price 2d. each (post free 3d.); or with a full index 6d. (post free 7d.). An annotated edition, of convenient size for the pocket, with notes, diagrams, and an index, has been prepared by Mr. Ewart S. Andrews, B.Sc., M.C.I., and is published, price 2s. 6d. net, by B. T. Batsford, Ltd., 94, High Holborn.

Waterproofing Flat Roofs.

A cement finish to a concrete flat roof is likely to become much more prevalent now that the question of making such roofs absolutely watertight has been solved by waterproofing the cement. In this respect we learn that some roofs have been successfully constructed at Newcastle-on-Tyne during the last three years. The cement waterproofing powder Pudlo was employed, and the architect has expressed his great appreciation of the result.

Bath Town-planning Scheme.

At the last meeting of the Baths Committee at Bath the Advertising Sub-Committee reported that Mr. Robert Atkinson, architect for the town-planning scheme, had amassed a great quantity of information, plans and photographs in the course of preparing his scheme, and it was suggested that this material might form the basis of a book on the town-planning and architecture of Bath, which would be of general interest and at the same time a valuable advertisement for the city. A well-known publisher would be prepared to publish the book if sufficient copies were guaranteed. The sub-committee recommended that if necessary 400 copies at 5s. be guaranteed by the Advertising Committee to be sent out for review, and to a list of people and otherwise used for publicity purposes, and that a sum not exceeding £100 be allocated from this year's estimates for this purpose.

A Scottish Conference on Housing.

Eight hundred delegates attended the first Scottish National Conference on Housing, which was held in Glasgow on January 3 under the auspices of the Local Labour Party Housing Committee. Mr. William Gallagher, of the Scottish Co-operative Society, the chairman, characterised the stoppage of the house-rent increases as a great victory for working-class solidarity. He was sorry the public

had not acted similarly towards increases in the price of food, clothing, and coal. Dr. Chalmers, the Glasgow Medical Officer of Health, said the quickest way to reduce the price of land in the cities was to cut down the height of tenement houses. The time had come when the abolition of the apartment houses should be considered.

ARCHITECTS AND MUNITIONS OF WAR.

We have received the following communication from Mr. Ernest Newton, President of the R.I.B.A., and Chairman of the Architects' War Committee:—

"The Royal Institute has been informed by the Ministry of Munitions that there is a serious deficiency in the supply of skilled men for work in munition factories, and that this deficiency is particularly marked in respect of tool-setters. The demand for such skilled workers is altogether greater than the supply at the present time; consequently it is imperative that suitable men should be trained at once for the extremely accurate work of setting up automatic and semi-automatic tools. It is necessary to train men for this purpose to a very high degree of accuracy. In the case of the manufacture of machine-guns the limits are in the neighbourhood of one ten-thousandth part of an inch.

"The experience gained from the professional men who are already assisting in this work proves that the most suitable men to be trained are of the more highly educated type. Arrangements have accordingly been made by the Ministry of Munitions for training men of this type. Such men will be given a course of training lasting two or three weeks, during which they will be paid £2 a week, and they will then be drafted straight into factories where they are most urgently required, and where they will be paid the standard rate of wages for the district for tool-setters. This rate varies from £3 10s. a week to £5, according to the district.

"The Selection Committee of the Architects' War Committee have been informed of this need, and have the matter before them in connection with the War Service Forms of those architects who are over military age or unfit for military service."

THE REBUILDING OF BELGIUM.

M. Emile Vandervelde, Belgian Minister of State, makes, in the "Sheffield Independent," a survey of the present position in Belgium.

As to material losses, he says, it is useless to try to estimate them. Some thousands of houses have been destroyed. Others, more numerous, have been stripped of all they contain. Termonde is no more; the centre of Louvain is nothing but a heap of ruins; Vise, Aerschot, Dinant have been sacked. As to the cities of West Flanders, Nieuport and Ypres, of all that made their beauty and their glory nothing remains but skeletons of monuments on a pile of rubbish.

Save in a few districts, the invaders have respected the great industrial establishments, not from motives of humanity, but because they hoped to employ them for their own purposes. Cockerill, Mariemont, the spinning and weaving mills of Ghent, the studio workshops of the artistic industries of Brussels or Antwerp, are intact, or nearly so. But a number of machines have been carried off to Germany. Raw materials have been, generally speaking, confiscated. The workers and

handicraftsmen have partly dispersed. The voluntary stoppage of workmen on the railways, in the coal mines, and the metallurgical establishments was an admirable thing, but the fact must be recognised that when the time comes there will be serious difficulties to be overcome before work can be resumed.

Add to this that the public services are disorganised, that the national and provincial treasuries are empty in consequence of war requisitions and contributions; that the resources of the State are not only exhausted, but that during the war the State has contracted, equally with our Allies, a formidable debt. Enough has been said to convey an idea, though very incomplete, of the efforts and sacrifices which must be made in order that Belgium may be born anew.

In a country so densely populated as ours, losses in men, deplorable as they are, are not irreparable from the point of view of numbers, and, certainly, it is not from lack of men or from shortage of labour that the new Belgium will have to suffer. John Stuart Mill said, more than half a century ago, "Nothing is more astonishing than the prodigious rapidity with which industrious nations repair losses caused by war."

On what lines this reconstruction will be carried out, the examples afforded by countries where entire districts have been destroyed by earthquakes, volcanic eruption, or great conflagrations such as have occurred in the United States, enable us to form an idea.

It may be taken as certain that Nieuport, Ypres, and Dixmude will be rebuilt upon their actual sites. The buildings have been destroyed, but the ownership of the land remains, and that being the case, the owners will naturally be led to rebuild in the same place.

A few days ago I was at Ypres. With a heart oppressed with grief I walked through that silent city of the dead, deserted by all its inhabitants, where there is not a house which is not in ruins, and where, on the Grand Place, the Cathedral of St. Martin and the Cloth Hall stand in their ruins, overwhelming evidence of what has been in our unhappy country the Teutonic Fury, worse than the Spanish Fury of the fourteenth century.

Well, I do not hesitate to say that I am opposed to the idea of reconstructing the Cloth Hall, of replacing those ancient weather-stained and fire-blackened stones, of raising an entirely new edifice in the likeness of the old. I would rather that we should leave in the midst of the new city, the city of the twentieth century—of course, properly shored and consolidated—those shell-riddled façades, whose roofless disrowned walls, those towers battered by the fire of the enemy. There will be for the Belgians of to-morrow a lesson and a remembrance.

As for the city itself, we shall not attempt to rebuild it as it was. What is done cannot be undone. The invader has swept the board. In the work of reconstruction we must take into consideration first of all the needs of modern life in the matter of air, light, gardens, and parks. Such work as this cannot be left to individuals. It will be the duty of the State and the municipality to provide a rebuilding scheme for the whole city; to give general directions and also to guarantee to those who have suffered by the war the necessary monthly advances for the re-establishment of their homes.

Already preparations are being made on these lines. The Belgian architects in Great Britain are devising and working out schemes which owe their inspiration to the "garden cities" and "garden suburbs" of England.

ELECTRICAL NOTES.

"Dowsing" Heating and Cooking.

It will be remembered by many in the electrical trade that Mr. Dowsing was the first to give practical adaptation to electrical heating in the early days by introducing the radiant heat form of radiator with tubular electric lamps, as well as convectors. His firm made quite a speciality of these heaters, and subsequently, with the sympathetic assistance of the medical profession, developed an important business in connection with their use of radiant heat for therapeutical purposes. The Dowsing Radiant Heat Company have largely extended their business in the direction of electric heating and cooking. Two pamphlets have just been issued by the company, the one dealing with Dowsing "Hot Bar" radiators and lamp radiators, convectors, and cooking appliances. The other is devoted entirely to electric cooking, and amongst the apparatus in this pamphlet is an interesting kettle provided with a "D. and H." heating element. The object of this element is to contain a highly loaded element to be accommodated in a small area. It consists of a very light casting, into which the mica strip elements are fitted between cast gills, which conduct the heat to the utensil being heated. The bottom of the element is covered with an insulated packing and then enclosed with a cover, so that the whole forms a solid, compact metal-clad heater with terminals attached. It is claimed to be very strong, economical, and easily interchangeable for various voltages. The kettle is recessed so that the water surrounds the heater on all sides except the base, and owing to the large amount of surface in contact with the heater the utensils fitted with it are very rapid boilers.

Electric Cooking at Euston.

There has recently been opened at Euston Station a new dining-room, in which a completely modern system of electric cooking has been substituted for the previously employed gas and steam heated apparatus. The work has been carried out under the supervision of Lieutenant-Colonel Cortez-Leigh, chief electrical engineer to the L. and N.W. Railway, and the complete equipment has been supplied by the Brompton and Kensington Accessories Company. The apparatus is installed in a kitchen in the basement and in a servery and grill adjoining the dining-room. The equipment in the kitchen consists of four electric ovens, having inside dimensions of 2 ft. by 2 ft. 6 in. high, the heating elements being arranged round the sides and back. Two three-way Diamond H switches are fitted to each oven, giving seven different degrees of heat-regulation, as well as Zed fuses and pilot lights enclosed in metal spinings as a safeguard against breakages. A hot closet is provided over the whole oven range controlled by two single-pole switches and having a load of 3 kilowatts, the total of the whole oven range being 23 kilowatts.

Next to the oven range are two ham boilers each of thirty gallons capacity for taking about eight hams of ordinary size, and having an aggregate loading of 7.5 kilowatts with heat regulation. Adjoining these is a kitchen double grill of 7 kilowatts with four push and pull switches, fuses, and pilot lights. A large boiling table is fixed in the centre of the kitchen, having twenty-three hot plates of from 1,200 to 2,000 watts capacity, aggregating a loading of 38.6 kilowatts. Each hot plate has a three-heat regulator, fuse and pilot light arranged round the frame of the top plate. The remaining apparatus includes a bain-marie in two sections of 1,500 watts each; a hot closet of 3.7 kilowatts loading with two heat regulation for 1,000 plates; and a vegetable steamer with six sections, three heat regulation and 4.5 kilowatts loading. There is also a small hot closet next to the service lifts to the servery for keeping the food warm whilst on the way upstairs and having a load of 2.3 kilowatts. The service lifts are provided with automatic push-button control, and are of the Waygood type.

The servery is fitted with a vegetable server adjoining the service lifts, having two-heat regulation for each compartment, the top plate being arranged for holding two upper sections of the vegetable steamer, which are transferred direct with their contents previous to serving. Its capacity is 4.2 kilowatts. There are also two soup tureens with hot water baths and six push and pull switches for heat regulation, a carving table with five cutting dishes, an electrically heated shelf for keeping plates and food hot, and hot cupboards below the table. This apparatus is regulated by six single-pole switches, and has a total loading of 10 kilowatts.

The electric grill adjoining the dining-room has two grilling compartments with top and bottom hot closets and a total loading of 12.2 kilowatts, the switches being of the push and pull type. In conclusion, the kitchen is provided with an efficient system of ventilation and extraction through special duct work, and tiled throughout. The total loading is 130 kilowatts, and the present number of meals served per day is about 400.



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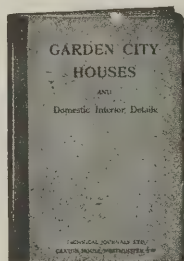


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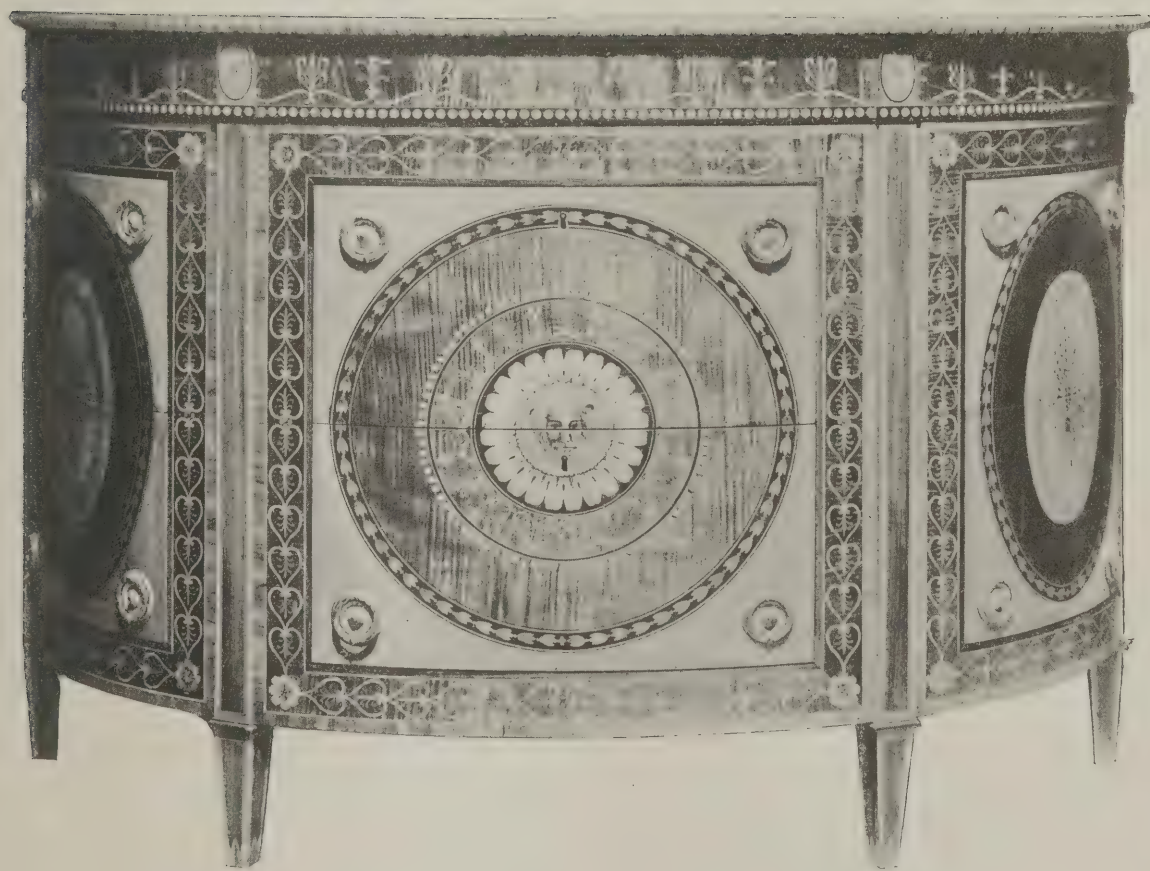
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THE
ARCHITECTS' & BUILDERS'
JOURNAL.

Wednesday, January 19, 1916.

Volume XLIII. No. 1098.



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(From the Collection of Sir William Lever.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

JANUARY 19, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1098.

EDITORIAL.

NEXT Wednesday, January 26, "at 10.30 o'clock in the forenoon," as the official announcement somewhat quaintly puts it, the National Federation of Building Trades Employers of Great Britain and Ireland will hold, at the Holborn Restaurant, London, W.C., their annual general meeting. As usual, an interesting agenda paper has been prepared, and is, as always, a faithful index to what builders are doing and thinking. They are, of course, for the nonce, assisting to make international history. It will be remembered that, long before the outbreak of the war, the Federation had established very friendly relations—a real *entente cordiale*—with the organised master-builders of Belgium, with whom visits and hospitalities were exchanged. It is now in the power of the Federation (and also of the Belgian master-builders) to translate into action and to mutual advantage the expressions of good-will to which those meetings gave rise. Certainly the Belgian builders must have found in the National Federation a veritable tower of strength, a very present help in trouble. M. L. Lootens, president of the Federation of Associations of Contractors of Western Flanders, and representative of the National Belgian Federation of Building and Public Works Contractors, has addressed to the British Federation a warm acknowledgment of this "comforting assistance upon hospitable English soil"; and it need not be said that to valuable moral support and sound guidance has been added material assistance in generous volume, some two thousand pounds having been subscribed to the Belgian Builders' Relief Fund.

This fund naturally figures in the agenda, which deals also with pre-war contracts—"as to position, and as to whether any steps should be taken to seek relief in respect of hardships arisen in connection therewith"; with the National scheme of conciliation, whose scope it is proposed to extend by the inclusion of half a dozen interests that are not at present represented; with wall-paper discounts, which manufacturers had proposed to reduce; and with the apprenticeship question, which, a matter of national importance, is of peculiar urgency in the case of the building industry, in view of the shortage of labour that is now being acutely felt. From the close, prolonged, and earnest attention that is being given to this matter by the Federation we are hopeful of a practical solution of a very difficult problem.

An always interesting feature of the winter meeting of the Federation is the annual election of officers, although this is to a considerable extent automatic. Mr. A. W. Sinclair, of Scarborough, who has so ably filled the position of president during a period of exceptional stress and difficulty, will, if the normal precedent is followed, relinquish the cares of office to Mr. W. F. Wallis, J.P., of Maidstone, who will be succeeded as

senior vice-president by the present junior vice-president, Mr. James Storrs, J.P., of Stalybridge. From this annual meeting two familiar faces will be missed with unfeigned sorrow. At the last half-yearly meeting, at Leeds, almost the last speaker was Mr. James Ramsden, of Bury. His hearers were shocked to learn that he died in his sleep that same night. He was a man of genial disposition, high ideals, and uncommon mental endowment; among his accomplishments being a happy knack of verse-writing. Still better known at Federation meetings was Mr. George Macfarlane, whose record of attendance was probably unrivalled, and who, as Mr. A. G. White has recorded, was by no means a silent member, but took a prominent part in debate on all important issues, when his homely rugged eloquence, full of pith and humour, was ever welcomed, and often exercised a potent influence on the ultimate decision. His ripe wisdom, rich humour, and large charity, endeared him to all.

Laconics that have strength as well as simplicity never fail to charm, provided the issue is as pleasant as it is pointed. These virtues are shiningly present in an example drawn from so unpromising a provocative as the housing of munition workers. Out Eltham way, many houses have been let for the accommodation of workers at the Royal Arsenal. It seems, however, that the scheme is incomplete by the omission of shops, by the absence of what a euphemistic writer calls "some cheery place of assembly," which we are perhaps wrong in supposing to indicate something in the nature of a tavern, and of another "cheery place of assembly" which, to do him justice, was perhaps the one in the writer's mind. After the periphrasis, there follow the economic laconics: "A well-known philanthropist who visited the village a few days after the first hundred families had moved into their new quarters remarked, 'Where is the church?' An architect replied, 'There is a convenient site on the hill.' The philanthropist rose to the occasion and promised the church." Brief, bright, brotherly. By this light, that architect is a master of artistic restraint, economy of materials, and subtle suggestion of purpose.

It appears from the annual report of the Society of Architects, of which an abbreviation appears in a later page of the present issue, that, on the whole, the war has had a rather bracing and tonic effect on that organisation. Financially it has grown stronger if not richer, and numerically it shows a slight improvement on last year's returns. Many of its members and students are serving with the colours, and the Society has been no whit behind other organisations in patriotic endeavour, aggressive or ameliorative. Naturally its Parliamentary activities with respect to Registration have been held in abeyance, but the sub-

ject which forms the chief *raison d'être* of the Society, is being kept vigorously alive; and certain contingencies of the war have been forced to contribute to its sustenance. From the seeming reluctance of the Government to avail itself as promptly and as freely as could have been wished of the proffered services of the architectural profession is drawn the moral that "until architects have a legal status, and are properly organised, they cannot expect to receive as a body that recognition which protected professions can claim." That is a strong argument which is wisely kept well to the fore; official standing weighing heavily in official quarters.

* * * *

It is recalled to mind, in this annual report, that the Society is engaged in drafting a new form of contract. As it is known that the R.I.B.A. and the master-builders' organisations are similarly engaged, the outlook for a boom in the waste-paper business is distinctly promising. Public authorities, already predisposed to draw up their own contract conditions, will be strongly confirmed in this ill-habit when confronted with an embarrassing choice of three or more "authorised" documents. Otherwise there would be no objection to these gentlemen amusing themselves in this mildly intellectual way. Ever since the days of the Abbé de Sieyès, who is said (no doubt with some exaggeration) to have drawn up a new constitution every day, the drafting of documents has been a kind of mania, harmless enough when the results are not inflicted on a long-suffering community, but a positive nuisance when they are. Recently we have noted that certain rules for measuring work drawn up by one of the professional societies have been promptly repudiated by certain builders' organisations. Why were those organisations not called into consultation before these documents were drafted?

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It is really distressing to see so much rivalry where there ought to be co-operation. It is yet another manifestation of that "sturdy British independence" which leads to such a lamentable waste of energy and effort. When an important document such as the general conditions of contract is under consideration, surely the drafting committee should be fairly and fully representative of all the interests concerned. True, it might occasionally happen that the representatives of conflicting interests would "neutralise each other's salts," with the result that the joint product would be feeble and ineffectual; and it is also true that the existing R.I.B.A. or National form of contract is, in a sense, a joint product. But it would seem that hitherto these consultations have not been conducted on quite the right lines.

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It has been too often the practice for one body to formulate a scheme and then to invite other bodies to assent to it; which is, generally speaking, and taking into account what an American writer has called "the psychology of cussedness," to invite opposition. Surely it would be better to form, at the outset, a cabinet of all the talents—composed, in the case of a general form of contract, of representatives of every interest concerned. Then, whatever the product, none of the parties would be able or disposed to regard it as something which a more or less antagonistic body had sought to impose upon it. At any rate, the multiplication of rival forms of contract stultifies the object of securing uniformity.

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Apparently—but, in the absence of precise details, we speak with some reserve on so delicate a point—they manage these things better in Scotland, where a "national building code" has been "established by

His Majesty's Stationery Office," whatever that phrase may mean. Its object is "to ensure uniformity of practice in entering into and carrying out building works, from the preparation of the schedules of quantities on which the contractor's tender is based to the payment of the final balance." We are curious to learn by what magic this extraordinary feat of consolidation has been accomplished:

* * * *

Having noted, upon several occasions, the arbitrary disposition of corporations to hold builders and others to the terms of pre-war contracts, we the more willingly give publicity to a noteworthy instance to the contrary. Stepney Borough Council, having entered upon negotiations for the purchase of a site in Arbour Square for their proposed municipal buildings, were informed of the willingness of the owners—the Mercers' Company of the City of London—that the completion of the purchase should be postponed until a period expiring twelve months after the termination of the war. This concession, however, was subject to the consent of the Board of Education. Not to make compliance seem merely perfunctory, the Board of Education, in consenting to an extension, vary its terms to "eighteen calendar months from December 7, 1915." Obviously, by the fortune of war, this concession may or may not meet the Borough Council's convenience; but it is something to have obtained this twofold recognition of the principle—let us call it, for morally it is no less—that, with respect to pre-war contracts, the effects of the war should be reckoned among the circumstances that alter cases.

* * * *

Newspaper representatives are just now resorting very freely to house-property agents for indications of the social trend, to which home-seeking or house-hunting affords a fairly useful clue. A glance through a score or so of these "interviews" shows that, with rare exceptions, the house-property agent is a cheery optimist. On the whole, it would appear that he is not doing at all badly. But individual or sectional prosperity may be no great cause for general rejoicing; and in the present instance the brisk movement is rather retrograde for the community. It mainly shows that large numbers of people have been seeking smaller dwellings. "There has been," says one expert—and most of the others have a similar tale to tell—"but little sale for the large type of country house with extensive ornamental grounds entailing expensive upkeep and showing no return, but there has been quite a strong demand for moderate-sized houses in all parts of the country, and particularly in the home counties." There has been also a good demand for furnished town houses and flats, particularly in the Belgravia, Mayfair, and Westminster districts.

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This information is given by a firm who add that "after fifty years of experience in North London in all kinds of dealings with property it appears to them that the circle seems to be completed somewhat in the following fashion: No new building estates are developing, consequently there is a greater demand for property already in existence. Hence higher rents, and eventually higher purchase prices." This need not come into the category of "vicious circles." For one thing, it may be taken to imply that, in the future, smaller houses will be better built and more tastefully decorated, while those that are already in existence must be modified to meet the more refined requirements of occupants who will bring with them *lares et penates* for which a suitable environment will be demanded; and their example will be imitated. Hence it may be fairly inferred that the new movement will bring fresh opportunities to the architect, the decorator, and the sanitarian.

HERE AND THERE.

COMPARED with the fact that there are more than 12,000 Germans and Austrians still unreturned in this country, it seems a matter of very small moment as to whether we allow enemy names to remain at our street corners. But the list is formidable enough to merit more than passing attention. London is said to have quite forty such names, among which are Blucher Road, Bremen Street, Dantzic Street, Hans Road, Leipsic Road, Mecklenburgh Square, Vienna Road, Waldeck Grove, and Wiesbaden Road; and towns in the provinces can no doubt each provide their quota. It seems likely, however, that we shall let them all remain. In things like this we differ very radically from the Germans, just as we do, for instance, in the matter of policemen. As the Teutonic lady said: "In Berlin we fear our policemen; in London you love them." And even if there were no positive evidence of the fact, we might be quite sure that the German police would not look so casually at the enemy word. Berlin has its Enemy-Words Committees, and for more than a year it has been at work on a ruthless system for expunging the offending titles. Hereafter "no new street signs with enemy words of any kind may be put up, and existing signs bearing them must be removed at the earliest opportunity." So passes the English word out of Germany. "Old England," "Jockey Club," and "The Prince of Wales" are taken down from their once beguiling position over the Berlin shop-front, and never again shall "Gent's furnisners" be set up to draw the German after our manner of living. Shall we not, by way of reprisal, "strafe" a few of the German names in our midst? Doubtless up and down the land we could find plenty to lay our hands upon, but we must not lose our sense of humour, else we shall find ourselves doing something of the sort of thing which the District Council of Farnborough, Hants, have decided to do, i.e., erase the name of "H. Fehrenbach" from the dial of the clock in their council chamber! So far as the architectural and building vocabulary is concerned, I fear there is but little scope for "strafing." At the moment I cannot recall a single name which is essentially Germanic in origin, though there are several which are French, and a few, like "forms" for reinforced concrete work, which are American: a state of affairs which may be regarded as etymologically very satisfactory. We may well pass on therefore to devote attention to matters of far greater consequence, notably to put enterprise into getting a large share of the rebuilding of Belgium, and to make a vow to keep German and Austrian goods henceforth entirely out of the English building trade market. It is still necessary to lay stress on the need for a drastic alteration in the attitude of our manufacturers. We are no longer "the workshop of the world," and the idea that the thing we have always made will do for ever must be entirely supplanted if we are to meet outside competition successfully.

* * * *

Architects just at present are not overburdened with work, and so have time to look round at places which perhaps they were well aware of before, but had never personally inspected. One such place in London is Dr. Johnson's house in Gough Square (a little backwater off Fleet Street), until recently a very dilapidated house, but now carefully preserved and put back again in its old state, much as the Great Cham knew it. The house is of the Wren period, with alterations of several later years. We can see a change in style, for example, in the types of baluster on the main staircase, the earlier, upper, part having balusters of the sturdy ship type, like those in the houses of the old Inns of Court, while the later balusters, of the eighteenth century, are slighter and more delicate in outline. On the top floor is the garret where the

famous Dictionary was compiled, and in the basement is a very roomy kitchen, while in between are the living rooms where the most clubbable and convivial of men was wont to entertain, and, incidentally, to bully, the meek Goldsmith, the obsequious Boswell, and the conveniently deaf Reynolds; and sometimes possibly the wayward Mrs. Thrale may have taken a dish of tea with Ursus Major. Great oak beams, still sound and strong, testify to the creed that meant building for eternity, while panelling throughout the house serves to remind us of the abundance of English oak which builders once enjoyed. The great doors on the ground floor are another reminder of a changed condition of affairs, for when these doors were fashioned London was not the safe place to live in which it now is. Johnson's day was the day of the watchman and the oil lamp. Mohocks were abroad at night on dangerous business, commencing with the wrenching off of door-knockers—a habit that existed so late as Mr. Tom Sawyer's time—and going on to all manner of devilish work. And there were other bands of villains to be encountered also. Hence the necessity for heavy doors like these in Johnson's house, with a huge iron chain across the back of them, hooked on to a spiral, and with other fastenings far more formidable than the modern lock and bolt. It is not without a strange reflection, too, that one sees the grille in the fanlight with its spiky bars; not put there primarily, be it remembered, with the intention of looking elegant, a pleasant craftsman's fancy on the threshold, but with the very real intention of preventing little boys being dropped through the opening to unfasten the door and let in Bill Sikes, waiting savagely without. We are ready always to realise how the baron lived in his feudal stronghold, with its moat and its drawbridge, but hardly in the same degree do we remember that the Englishman's house needed to be his castle down to a very late date. It was the advent of Sir Robert Peel's "peeler" that made life in the town so different. One feature of Dr. Johnson's time which is rather strangely absent at the house in Gough Square is the link extinguisher, of which there were usually two, on either side of the door; but there are many to be seen close at hand, as on the Canons' houses in Amen Court. They recall that darkest London which, by a turn of fate, we of the present are also experiencing.

* * * *

We were looking at some teak sinks in a new hospital, and I asked the clerk of works whether it really were the fact that some men found it injurious to work teak. He assured me that it was. He himself had worked a good deal of teak in the joiner's shop, and though it never affected his own health, he told me of a case where a workman was laid up for several months owing to the effect of teak upon him. This workman got very hot at the bench, and the teak dust settled on his perspiring arms, causing irritation. Subsequent rubbing of his arms caused inoculation. There seems to be no shadow of doubt that teak has this injurious effect on some people. I believe it is also true that a teak splinter will sometimes cause acute blood-poisoning. The reason must be of course that there is poison in the wood, drawn from the swamps of India, where the teak tree grows, and it is this which does the mischief. No other wood commonly used in building has such ill effects. At the same time no other wood has the merits which teak possesses for some purposes.

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They generally come South, those enterprising young architects who seek fame and fortune, and in due time some of them succeed, and become prosperous. On occasion they join hands, and two blossom forth into a firm. May I therefore suggest a title for the next addition to the list of architects who mean to prosper. It is quite simple, and would look well on a brass plate: Onit and Onit, F.F.R.I.B.A.

UBIQUE.



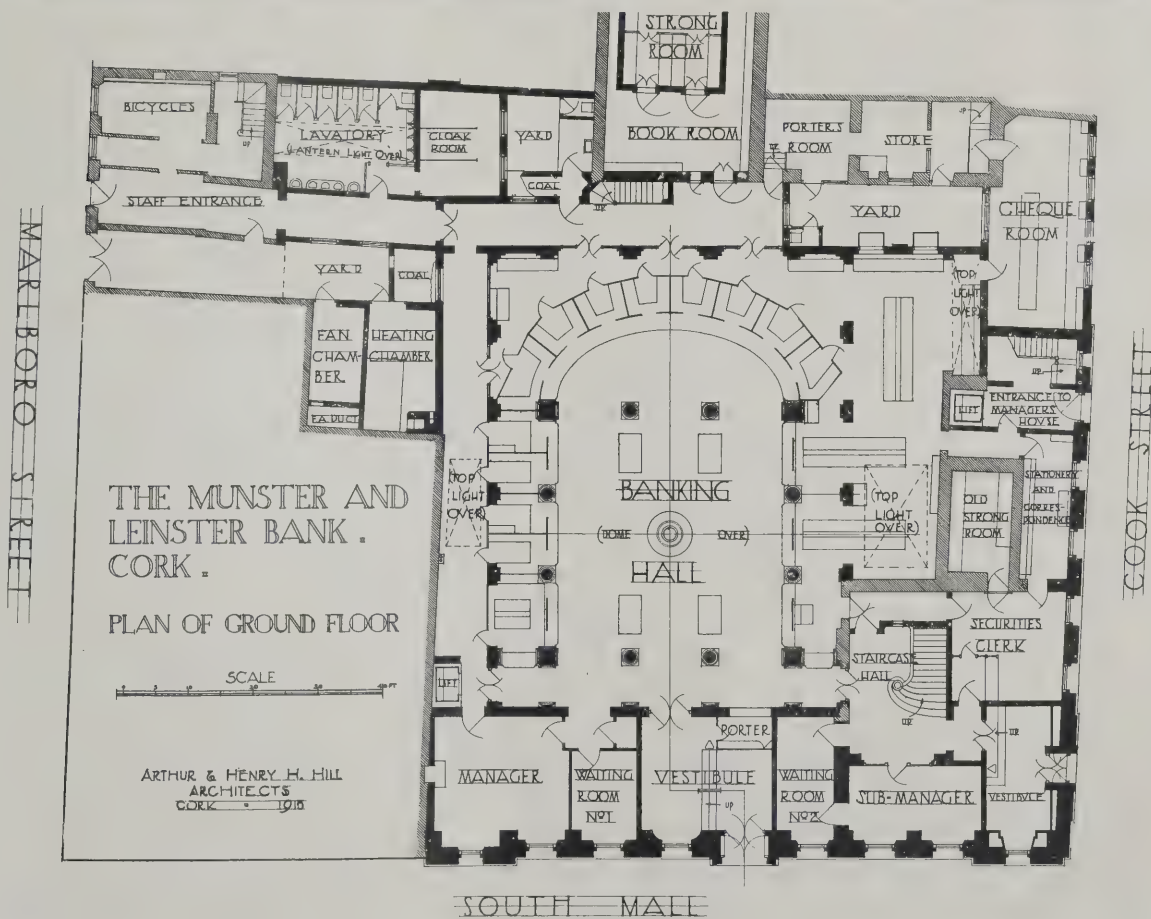
CURRENT ARCHITECTURE (SERIES II.). XVII. MUNSTER AND LEINSTER BANK, CORK : VIEW OF GALLERY ACROSS
BANKING HALL. FROM LANDING OF PRINCIPAL STAIRCASE.
ARTHUR AND HENRY H. HILL. ARCHITECTS.

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MONUMENTS. IX.—MONUMENT TO BERNARDO GIUGNI IN THE CHURCH OF THE BADIA, FLORENCE,
MINO DA FIESOLE, SCULPTOR.

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CURRENT ARCHITECTURE (SERIES II.). XIV.—MUNSTER AND LEINSTER BANK, CORK.

ARTHUR AND HENRY H. HILL, ARCHITECTS.

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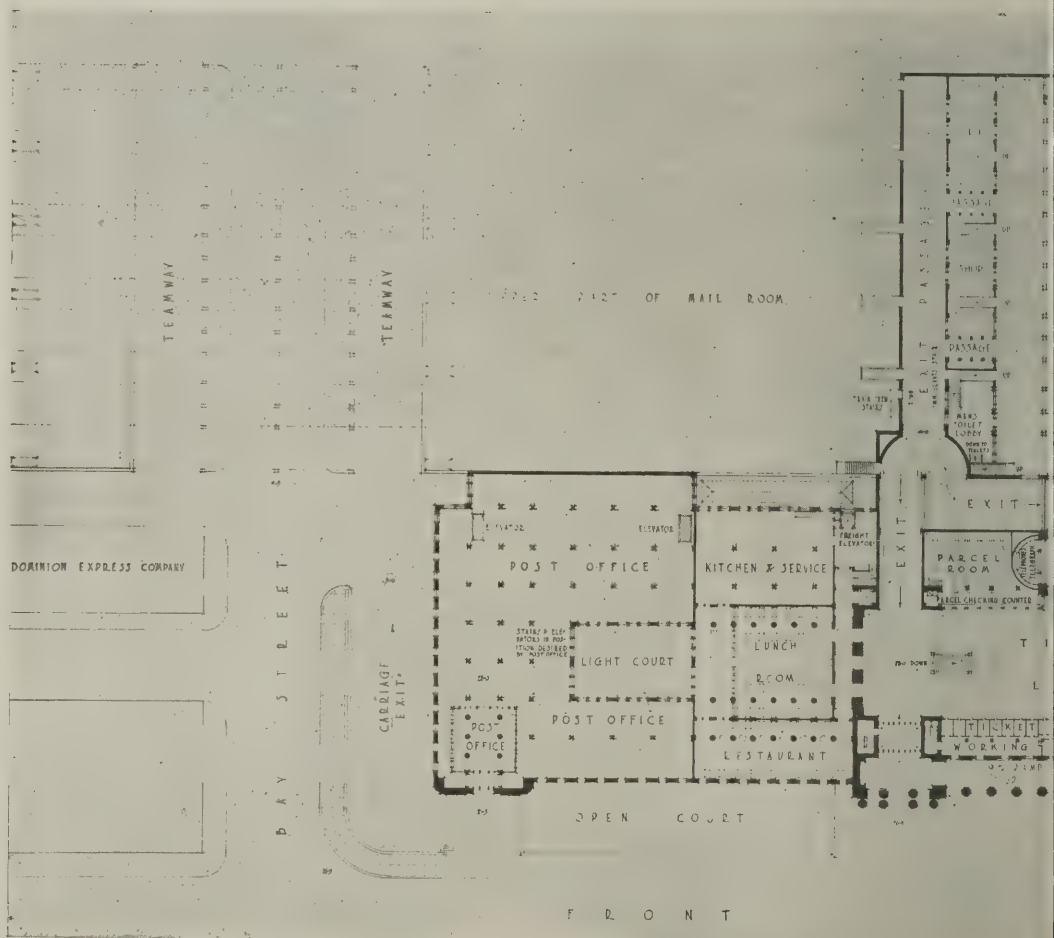


LONDON FAÇADES. VI.—No. 20, ST. JAMES'S SQUARE.

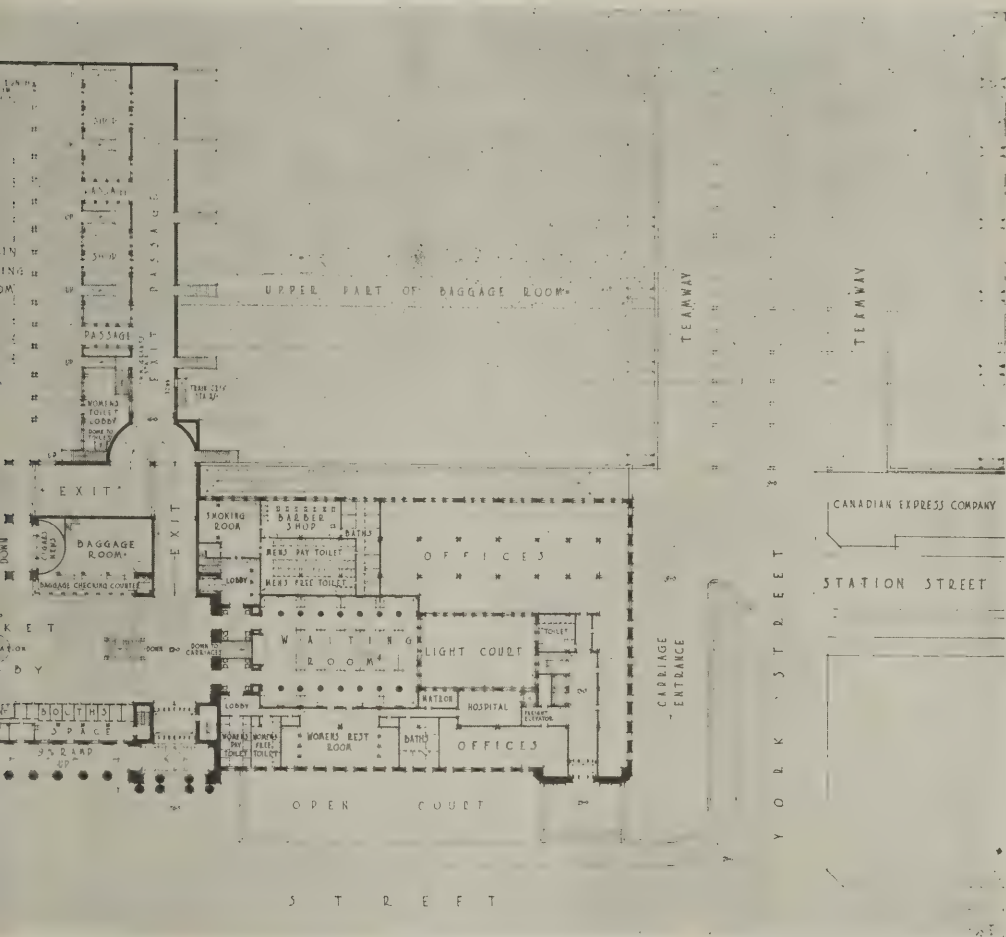
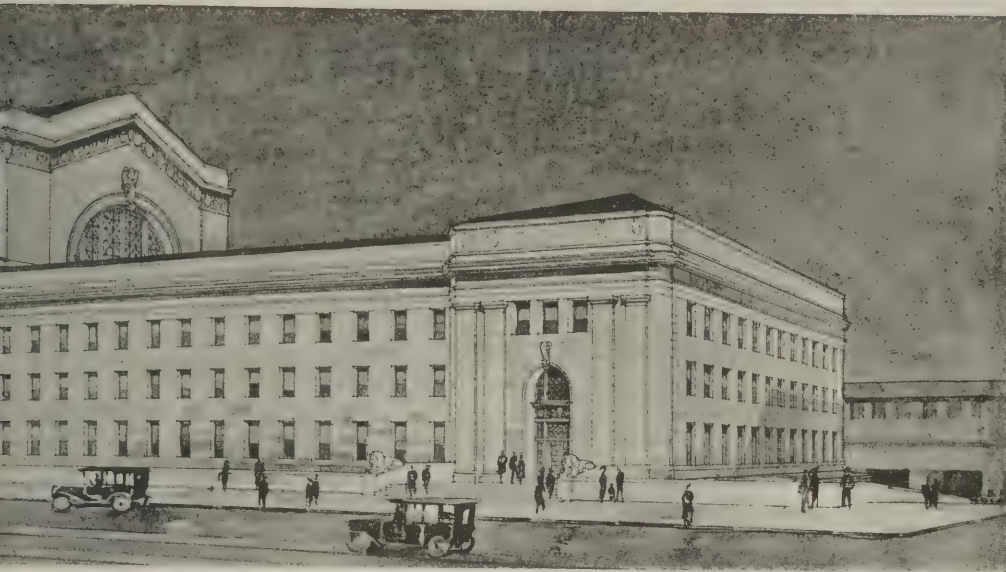
ROBERT ADAM, ARCHITECT.

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CURRENT ARCHITECTURE (SERIES II.)
ROSS AND MACDONALD, HUGH G. JONES, AN



XIII.—UNION STATION, TORONTO.

JOHN M. LYLE, ASSOCIATED ARCHITECTS.

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THE PLATES.

Munster and Leinster Bank, Cork.

THIS new building was originally the subject of a competition limited by invitation to eight architects of Dublin and Cork; Mr. G. C. Ashlin, R.H.A., being the assessor. One of the most important conditions of the competition was that the plan should be so arranged that the business of the bank could be continued without interruption during the progress of the building operations. This condition dominated the plan, making it necessary to place the new banking hall eccentrically with regard to the front, in order that it might be built and completed while the principal part of the old bank, occupying the south-east corner of the site, remained undisturbed. When the new banking hall was finished, the rebuilding on the eastern side of the site was then proceeded with, but leaving certain old walls which could not be taken down without further disturbance to the bank's business, and the old strong-room, which was in such good condition that the great expense of altering and removing it elsewhere was unjustifiable. The public banking hall has naturally been made the principal apartment of the building, and the eight marble columns which assist in carrying the dome over it form its principal architectural embellishment. Six of these columns are old, and their history is interesting. Consisting of Breccia shafts, with alabaster caps and Ipolepen (Devonshire) pedestals, they were originally designed by the late F. C. Penrose to carry an organ loft in St. Paul's Cathedral. The organ, however, was never placed upon them, and they stood in the south transept for many years. Finally they were sold by the Dean and Chapter to Messrs. Farmer and Brindley, from whom the architects of the bank (Messrs. Arthur and Henry H. Hill, of Cork) learned of their existence, and that, by a strange coincidence, they were exactly of the dimensions required. As eight columns were needed,

Messrs. Farmer and Brindley succeeded in reopening the quarry in Italy from which the shafts originally came, and two more stones were obtained. These were got only with difficulty, the reason for giving up the quarry thirty years before having been that it was considered to be worked out. The firms engaged on the new building were: John Sisk and Son, Cork (general contractors, portion of fire-resisting floors, and bank fittings); Homan and Rodgers, Manchester (portion of fire-resisting floors and asphalt roofs); Chatwood Safe Co., Ltd., Bolton (strong rooms, etc.); British Challenge Glazing Co., Ltd., London (dome and roof glazing); Musgrave and Co., Ltd., Belfast (heating and ventilation); Waygood and Otis, Ltd., London (push-button lifts); Farmer and Brindley, London, and J. A. O'Connell, Cork (marble work); Marble Mosaic Co., Bristol (terrazzo floors); J. W. Singer and Sons, Frome (counter grilles and electric fittings); James Gibbons, Wolverhampton (locks and furniture); John Buckley and Sons, Cork, and Musgrave and Co., Ltd., Belfast (ornamental ironwork); John O'Connell, Cork (decorations). The clerk of works was Mr. Thomas O'Byrne.

Monument in the Badia, Florence.

This monument to Bernardo Giugni (1466) is an admirable piece of architectural design, though the sculpture is not quite so happily placed as in some other monuments by Mino de Fiesole in the same church.

No. 20, St. James's Square, London.

No. 20, St. James's Square was built for Sir Watkin Wynn, and is one of the best examples of Robert Adam's town work. The façade is extremely refined, marred only by the ironwork porch, which, with the entrance at one side, gives a lop-sided appearance to the ground-floor storey.

Union Station, Toronto.

This is described in the article on the next page.



Principal Staircase.



Board Room.

THE UNION STATION, TORONTO.

ABOUT three years ago the Grand Trunk and Canadian Pacific Railways entered into an agreement to form a Terminal Company for the purpose of erecting and operating a Union Station at Toronto. The Terminal Company appointed as its consulting engineers Mr. H. R. Safford, chief engineer of the Grand Trunk, and Mr. J. H. R. Fairbairn, assistant chief engineer of the Canadian Pacific, with Mr. J. R. W. Ambrose, engineer of grade separation, as chief engineer of the Terminal. Messrs. Ross and Macdonald and Hugh G. Jones were appointed architects to design and supervise the construction of the work, and with them Mr. John M. Lyle, of Toronto, was subsequently associated as local representative.

The architects were instructed to provide a station which would adequately meet the needs of the passenger traffic of the city, and to make the fullest provision for the baggage traffic. To this end they made a very careful study of the conditions at Toronto, and paid various visits of inspection to the large termini of the United States; the result of their investigations being embodied in a report which they presented to the engineering board of the Terminal Company. This report showed the passenger traffic at Toronto to be equal to that of Washington; but the baggage traffic was found to be equal to that of the Pennsylvania Station, New York, and the parcel business bore nearly the same relation; the average number of pieces of baggage or parcels per passenger being greater at Toronto than at any large station on the Continent, so far as could be ascertained from available records.

In working out the design it was found that the average normal traffic at Toronto could be accommo-

dated by a station building of somewhat smaller dimensions than the one shown by the illustrations in this issue, but the consideration of the heavy maximum periods influenced the architects in recommending the construction of a building large enough to afford complete separation of entrance and exit traffic during these periods, and for the time when the traffic of the station should have grown to demand it. This complete separation of traffic is indeed the dominating idea of the plan, and in this respect the new Toronto station is unique, no other station enabling a similar object to be accomplished so completely. The Grand Central Station in New York provides separation of express and suburban traffic on two levels, the inbound and outbound express traffic being further separated through the provision of additional separate station buildings. The Pennsylvania Station, New York, provides a separate exit concourse, but the arrangements are such as to make the meeting of friends difficult. The new Kansas City Station provides separation until the ticket lobby is reached.

It so happens at Toronto that the elevation of Front Street above the present track level affords an opportunity for placing a train waiting-room midway between the street level and the exit concourse beneath the ticket lobby. This arrangement approximately averages the distances which entrance and exit passengers have to travel, and does away with all confusion, crowding, and inconvenience.

The great advantage to the travelling public will become immediately apparent to anyone who will analyse the operation of the station designed under these conditions. The passengers on entering the station to take trains will pass into a large ticket lobby,



UNION STATION, TORONTO: THE TICKET LOBBY.

ROSS AND MACDONALD, HUGH G. JONES, AND JOHN M. LYLE, ASSOCIATED ARCHITECTS.

approximately 90 ft. wide by 250 ft. long. In this lobby, within clear sight, are placed all the general business facilities of the station. In the centre of the space is the information bureau; on one of the long sides are the ticket offices, to the number of twenty; while at one end is the restaurant, and at the other end the general waiting room. Opposite the ticket offices are the parcel-checking counter and the baggage-checking counter, each with a frontage of 50 ft. These are separated by a 40-ft. entrance passage to the train waiting-room, which, as already explained, is arranged beneath the tracks. Similar rooms are provided in the new Michigan Central Station at Detroit, and the new Union Station at Winnipeg, though these are much smaller than the one to be provided at Toronto.

The train waiting-room is reached by passing down a broad easy ramp in the entrance passage from the ticket lobby. As the stairs to trains lead directly out of this room from either side, it will naturally be a gathering place for passengers. The room, though limited in height by the elevation of the tracks, will be 100 ft. by 250 ft., and will be made attractive by marble and glazed terra-cotta; it will provide all the comforts which may be required by waiting passengers, including an abundance of light and ventilation, and concessions for the sale of various articles which may be needed by the traveller. Access to trains is by stairs to the right for west-bound trains and to the left for east-bound trains; announcements concerning the departure of trains being placed at each stair to train platforms. Passengers arriving will descend separate exit stairs leading from the train platforms to separate exit concourses placed on either side of the train waiting-room, and provision is made so that passengers who wish to reach trains on other tracks may pass through to this room.

The difference in levels makes possible the provision of easy ramps from the exit passages to an exit concourse placed beneath the ticket lobby. During heavy periods outgoing passengers will pass through this exit concourse, which, except for the ticket offices, is practically a duplicate of the ticket lobby above. The information counter is in the centre of the room, and parcel-checking and baggage claim counters are provided in positions directly beneath those of the ticket lobby, an arrangement which enables the business capacity of the station to be practically doubled, while the absence of interference by entering passengers will greatly facilitate the transaction of business. Similarly, passengers hurrying to trains will not be hampered by crowds of outgoing passengers.

The arrangements for meeting arriving or departing passengers are ideal, inasmuch as there will be but one point where all passengers can be met, irrespective of the direction from which they arrive.

In connection with the general waiting-room, at ticket-lobby level, provision is made for men's toilets one one side, and for women's toilets, adjoining a women's rest room, on the opposite side; there are provided also a baby-room, matrons' room, and emergency hospital, so placed as to avoid the taking of invalids through the station building proper. Toilet facilities are also arranged in connection with the train waiting-room.

Immigration quarters are so placed as to permit the passing of immigrants through the station without traversing the public portions of the building.

Extensive provision for handling the enormous baggage and mail business of the station are made in the space beneath the train viaduct, with direct communication by elevators to all the train platforms.

The building displays in its design a modern adaptation of the Classic architecture of Rome, an effect of dignity being secured by studied massing, abundance of plain wall surface, and a sparing use of ornament. In this respect as in its general planning the station is an object-lesson to English railway companies.

"SPECIFICATION," 1916.

THE 1916 edition (No. 18) of this annual publication is now nearly ready for delivery. With the object not merely of maintaining its reputation as the most comprehensive work of reference for architects and for all branches of the building industry, but also of rendering it specially helpful in the present crisis, more labour has been expended upon the production of the present issue than upon any of its predecessors; because it was felt that a work so abundant in authoritative technical information should be made capable of use as an effective instrument for the furtherance, within its own domain, of the higher efficiency that is at length seen clearly to be of vital importance to the national welfare.

Special attention may be directed to an article on "The Outlook for the Building Industry," in which Mr. A. G. White, the general secretary of the National Federation of Building Trades Employers of Great Britain and Ireland, reviews, with knowledge, sagacity, and candour, the present position and the future prospects of the industry with which he is so intimately associated.

To the section on Military Hospitals and Sanatoria has been added, with the permission of the War Office, a fully illustrated description, by its architect, of the fine new war hospital at Huddersfield.

In view of the increased fire hazards arising from enemy air-raids, it is interesting to note that the Fire-resisting Construction section has been entirely re-written by Mr. Harold G. Holt, A.R.I.B.A., the author of a standard book on the subject. A specification has been added.

Recent remarkable developments in the multifarious applications of coal-gas have suggested the complete revision of all the sections relating to this important subject, and the sections on lighting, heating, cooking, etc., have been in this respect brought thoroughly up to date.

The Electrical Engineer section has again had the benefit of revision by Mr. R. Borlase Matthews, A.I.E.E., etc.; and the Concretor Section has been further improved and extended. To it several new illustrations have been added, and it undoubtedly embodies the most valuable description extant of the various standard systems of reinforced concrete construction; to which are appended full descriptions of the various waterproofing processes; several pages of formulæ from the newly issued London County Council regulations for reinforced concrete construction; and a compendious account of approved types of hand and power concrete-mixing machines.

A new article on the adaptation of reinforced concrete to road construction appears in the Municipal Engineering division of the volume; and other important new articles deal with such eminently practical subjects as the carcassing of buildings with gas piping; steel piling; vacuum or suction cleaning, by Mr. H. J. Ireland, B.Sc.; and the specification of alterations, by Mr. J. E. Reid, Licentiate R.I.B.A.

Closer business relations, present and prospective, with our French-speaking Allies, have suggested the compilation of an English-French glossary of words and phrases relating to the building industry. This will be found extremely serviceable to business men supplying goods or materials for use in the reconstruction of the devastated areas.

This is but an imperfect outline of an unusually extensive programme. An exhaustive analysis of the contents of this bulky volume would occupy as many pages as its improved index, which now affords a ready clue to many thousands of items of technical information. The price of the volume is 3s. 6d., and its publishers are Messrs. Technical Journals, Ltd., 27-29, Tothill Street, Westminster.

STANDARDISED ALL-STEEL EMERGENCY BUILDINGS.

Never before has there been so large a demand for temporary buildings as that which has been created by the exigencies arising from the present war. Hundreds of thousands of troops in training must be accommodated in out-of-the-way places where large areas of camping ground are available; for the sick and wounded temporary hospitals and sanatoria must be provided; munition workers must be housed, refugees sheltered, alien enemies interned, and it is necessary to put up at short notice buildings to take the place of the thousands of ruined houses in the theatre of war.

At the invitation of Messrs. The Trussed

Concrete Steel Co. of America, a representative of this journal visited last week a field in Buckhold Road, Wandsworth, where demonstration buildings—they deserve a more dignified name than huts—were being erected on this company's system. One saw the standardised sections delivered in crates, unpacked, placed in position, and wedged together with almost the rapidity with which "the house that Jack built" is put together by the industrious gnomes in the pantomime. Not to exaggerate the speed, it should be said that, as a matter of fact, three men can erect one of these steel huts in four hours; which, apart from pantomime, is quick enough to meet all ordinary emergencies. And the resultant structure is sound and strong, windproof and weatherproof, making a thoroughly comfortable

interior, with its panelled walls, lapped roofing, graceful gable ends, and excellent proportions, presenting both inside and out a very pleasant appearance.

All the units are of pressed steel, each 4 ft. by 7 ft. 10 in. wall section, showing two panels, which afford very grateful relief to the eye accustomed to the uncompromising plane surfaces usually found in emergency buildings. Each of the units is grooved, flanged, and slotted on its edges in such a way as to form a perfectly weathertight interlocking joint with the next member, and stability is secured by means of an ingeniously arranged system of wedging; the roof-trusses (a simple form of the kingpost), with their braces, helping to make the structure perfectly rigid throughout. Steel planks (if the expression is admissible) form the roof-



A STANDARDISED ALL-STEEL HUT.

covering, and they are overlapped and interlocked in such a way as to provide an absolutely weathertight joint.

Neither the white ants of tropical or sub-tropical countries, nor the ubiquitous rat or other rodent, would attack the mildest of mild steel with much appetite or with any probability of success; and, as we have said, the material of these huts is of pressed steel throughout, with the exception of the flooring joists and boards, for which vermin-proof substitutes could doubtless be provided if required. Moreover, the extreme practicability of these buildings, which can be either put up or taken down with the utmost rapidity, while the units can be packed within easily manageable compass, renders them eminently adaptable to what may be called pioneering or campaigning conditions; and these advantages, as well as their neat appearance and their interior cosiness, indicate them as covetable by officers on active service. Skilled labour is unnecessary for their erection, and no special tools are required. Foundations are not usually needed, sleepers being commonly sufficient; but to meet the peculiar conditions of locality the buildings erected in Buckhold Road, Wandsworth, have been raised on rough concrete sleeper walls.

Undoubtedly very large numbers of portable buildings will be required for the devastated regions in the western and other theatres of war, and these pressed-steel buildings provide an ideal form of equipment.

SOCIETY OF ARCHITECTS.

In the thirty-first annual report of the Council of the Society of Architects it is stated that, while all the departments of the Society's work have been affected by the war, its position both numerically and financially has been not merely maintained, but more firmly established. This has been effected by a policy of economy which, while not interfering with the essential activities of the Society, has enabled the Council to conserve the individual interests of members, especially of those more seriously affected by the war than others, to consolidate the Society's resources, and to make what provision is humanly possible for future contingencies.

Twenty-one candidates have been elected to membership by ballot of the members, and one graduate and six students have been admitted to the respective registers by the Council. After allowing for deaths, resignations, lapses, removals, and transfers, the total membership on October 31 was 1,213, made up as follows: Honorary members, 30; retired members, 25; members, 1,003; graduates, 7; students, 148. The Society has sustained the loss by death of the following members and students: W. Hervey Brown, York; H. W. Burton, London; Lance-Corporal Piper James Carey, London; W. H. Gibson, Pretoria; J. E. Stanley Pritchard, Kidderminster; S. W. Kershaw, London (hon. member); Second-Lieutenant C. H. Hudson, London; Second-Lieutenant T. E. Turner, London (students).

Of these the following were killed in action: Lance-Corporal Piper James Carey (member), 1st Battalion London Scottish, London; Second-Lieutenant C. H. Hudson, 1st King's Liverpool Regiment, London; and Second-Lieutenant T. E. Turner, 13th Battalion London Regiment, London (students).

Members on War Service.

Up to October 31, information had been received that ninety-five members, one retired member, one honorary member, three graduates, and fifty-four students are on active service. (The total on active service has since reached about 200.) Very many members are over military age or otherwise ineligible, and of those who may be called the junior members, that is to say, the graduates and students, three graduates out of seven and fifty-four students out of one hundred and forty-eight were with the Forces on October 31. Probably all the "ineligibles" are either members of volunteer training corps, or voluntary aid detachments, or engaged on munition or other war work, or are holding positions in Government works and departments connected with military operations, or are serving as special constables.

The war has had the natural effect of lessening the number of applications for membership, but, on the other hand, the number of resignations due to the war is negligible, and the total resignations do not exceed the normal.

Attendances on Sub-Contractors.

As stated in the last report, the Council was then in negotiation with the Surveyors' Institution on the question of the definition of the term "attendance," the proposal being that the sub-contractor shall know precisely what services must be performed by him and rendered to him. The Council, after careful consideration of the memorandum, was able to approve in principle the recommendations of the Surveyors' Institution, but made some suggestions for alterations in detail. These related more particularly to descriptive items which it was thought might with advantage be summarised in the case of small contracts, and set out fully in works of more importance. The Council also suggested an additional clause relating to the use of scaffolding. After further negotiations, the Surveyors' Institution intimated that the suggestions made by the Society would be adopted when re-issuing the circular on attendances on sub-contractors.

Miscellaneous Activities.

Other matters dealt with in the report are: The Council's protest against the issue by the Board of Agriculture and Fisheries of a report containing designs, specifications, and working drawings of cottages; the drafting of a model form of conditions of building contract; endorsement of tenders, as suggested by the Institute of Builders, to the effect that the tender is based on the rates of wages prior to August, 1914, and that any advance in these rates should be added to the contract, and if necessary an extension of time given for completion. The Council of the Society was unable to approve the clause as worded, and suggested that it should be modified to provide that the tender is based on the normal rate of wages prevailing at the date of sending out the tender. Any variations exclusively due to war conditions to be adjusted on completion, and the contractor is not to be relieved of his obligation to protect himself by placing his orders for materials in the early stages of the contract. The architect's decision on these matters is to be final and without appeal. The Council of the Institute of Builders subsequently conveyed the Society's views to its members and those of other representative bodies of the building trades. Another point raised with the Society by the Institute of Builders was

the rise in cost of building materials due to the war, and the desirability from the builders' point of view of getting architects to give favourable consideration to any claims for extras due to this cause. The Council of the Society felt that it was a matter in which members should exercise their individual discretion.

Competitions.

Competition conditions have received a good deal of attention. Local honorary secretaries and other members render good service by calling attention to any projected competitions. In one case a member was instrumental in getting a scheme withdrawn by himself pointing out to the promoters certain omissions in the conditions which would have debarred him as a member of the Society from competing. It will be seen therefore that something can be done by individual effort as well as by action through the Society. One member tendered his resignation at the request of the Council after taking part in a competition which had been vetoed by the Society, and another who had enquired as to his position in the event of his competing under similar circumstances on another occasion withdrew from the competition.

Registration.

The Society's Parliamentary propaganda in this direction has been suspended during the war. The need of registration in the interest of all concerned becomes more evident every day. The war itself has provided an object lesson in the attitude of the Government towards the profession as a body, in placing in other hands very much work in connection with war contracts, which might well have been allotted to architects, even if only as some compensation for its action—no doubt a very necessary one at the moment from the Government point of view—of discouraging public and private expenditure on building operations. Until architects have a legal status and are properly organised they cannot expect to receive as a body that recognition which other protected professions can claim. The efforts of architectural bodies in other parts of the Empire are all in the direction of statutory registration, and in several of the Dominions success has been attained, and in others the question of registration is still being debated with a view to further action at an early date.

The Beaux-Arts Committee.

The Council at the commencement of the session renewed its permission for the Beaux-Arts Committee to use the Society's premises for its meetings, and the services of the Secretary and of the clerical staff for carrying on its business. The war has affected the influx of new members into the Atelier, but the work has been continued on the same lines as before, although under somewhat different conditions. The Sous-Patron, M. Chaures, who has been with the Army of France since the outbreak of war, has been seriously wounded. All the eligible members of the Atelier have enlisted or obtained commissions, and several of the most promising of them have been killed in action.

The Scheme of Civic Surveys

has received Government sanction and support, and is now a separate department. The Council offered the promoters the use of the Society's premises for the survey work, but it was evident that the requirements would include accommodation for a staff of draughtsmen and investigators which it was beyond the Society's

present power to house. The work is being carried on at the R.I.B.A. Galleries, and provincial centres have been also established. Some of the work connected with this still falls upon the Professional Employment Committee, but its chief work is in dealing with developments of the Society's original proposal of finding temporary paid work for architects in distress owing to the war. This usually takes the form of measured drawings or descriptive reports on many and varied subjects, and is distinct from the Government Civic Survey work. It may be remembered that as an earnest of its desire to support the scheme for providing paid professional work, the Society made a donation of one hundred guineas as the nucleus of a fund. The members of the Society have since augmented this to a total of £175 odd.

Architects' V.T.C.

The Society took an active part in the formation of the Architects' Volunteer Training Corps, and contributed a sum of £25 to the preliminary expenses. The president, Major E. C. P. Monson, is a sub-commandant of the Corps, which now has permanent headquarters at Chester House, Eccleston Place, S.W.

Housing Schemes in War Time.

The Society has agreed to co-operate with the National Housing and Town Planning Council in any representations which that body may make to the Local Government Board, with a view to obtaining their consent to the preparation of housing and town-planning schemes during the war, so that everything may be in readiness to start the work when peace is declared.

Government Research Council.

The Council has accepted an invitation from the Research Council of the Board of Education to co-operate with them by furnishing a statement indicating the specific problems requiring investigation of the industries with which the Society is most intimately concerned. The administrative chairman of the Research Council is Sir William S. M. McCormick, LL.D.

Russo-British Chamber of Commerce.

The Russo-British Chamber of Commerce at Petrograd intimated to the Council that amongst architects and art circles in Russia there is a desire to remove German influence on the architectural and decorative arts in Russia and to replace it by British. They invited the Council to bring the fact to the notice of the members of the Society, and to remain in communication with the Chamber, as, after the war, it is proposed to hold an Anglo-Russian Building Trades Exhibition in Petrograd. The Society is keeping in touch with the movement.

Belgian Architects.

Acting on a suggestion made by a member, the Council decided to offer the hospitality of the Society's premises, and the entrée to its meetings, etc., for the duration of the war, to Belgian architects temporarily resident in this country. The secretary of the Royal Society of Architects of Antwerp, who is residing temporarily in London, took the matter up with other Belgian architects, and a notice of the Society's offer appeared in several Belgian papers published in England. A small committee of Belgian architects was formed subsequently to discuss the matter, and it was subsequently made clear to the Council that if it might not be possible to make use of the offer to any considerable extent there was no lack of appreciation of the spirit in which it was made.

LEGAL.

Engineering and Building Contract.

Wellman, Seaver, and Head v. Skinningrove Iron Co., Ltd.

January 12. Official Referee's Court. Before Mr. E. Poulton

This action, in which Messrs. Wellman, Seaver, and Head, of Victoria Street, Westminster, sought to recover from the Skinningrove Iron Co. the sum of £25,982, balance of £80,313 for work done and materials supplied in connection with the construction of two steel furnaces at defendants' works at Skinningrove, near Middlesbrough, was resumed. (See our issue of January 5.)

The defendants pleaded a set-off and counterclaimed in respect of damage alleged to have been sustained owing to the plaintiffs having failed to complete the work within a specified time.

Since the commencement of the proceedings, according to a statement by Mr. Colefax, K.C. (plaintiffs' counsel), an arrangement had been come to between the parties by which the plaintiffs withdrew a number of items of claim amounting to about £5,000, while the defendants, on the other hand, had withdrawn practically the whole of their counterclaim.

Mr. Colefax, on the case being resumed, said that he was unable to continue the examination of Mr. Head, the managing director of the plaintiff company, as that gentleman had since the last hearing contracted a chill and was by doctor's orders confined to his room, where he would probably remain for a few days. Under the circumstances, he proposed to call another witness from the plaintiffs' office who had had to do with the carrying out of the contract, as to the formation of which Mr. Head was giving evidence when the hearing stood adjourned over the vacation.

Mr. Lailey, K.C. (for the defendants), objected to other evidence being called before he had had the opportunity of cross-examining Mr. Head, as he thought the defendants' case would be prejudiced by such a course. The arrangement between counsel and the Court was, he said, that he should put the defendants' case to Mr. Head in cross-examination, after which the Referee would be asked to visit the defendants' premises in the North and inspect the work of the plaintiffs which he was called upon to adjudicate.

A discussion between counsel followed, resulting in the Official Referee deciding to take the evidence of the witness referred to by Mr. Colefax.

Mr. Henry William Frederick Soward, engineer in the plaintiffs' employ, was accordingly called and gave evidence in detail as to the carrying out of the contract.

Witness was closely cross-examined by Mr. Lailey, K.C. (for defendants), as to the details of the work done by the plaintiffs, and the charge made by them, and during the examination counsel came to agreement upon many points in regard to figures. On the question of extras, the witness said that many alterations were made in the original drawings at the instance of the defendants' representatives, amongst them being the substitution of movable for fixed platforms by the side of the furnaces, in respect of which plaintiffs claimed the difference in cost. The fixed platforms, he said, have cost £10 a ton, and for the movable platforms they had charged £19 10s. per ton, crediting the defendants with the price of the former, as they would have come within the contract for the building. By the contract

plaintiffs had to prepare drawings for approval, but the plans so prepared were altered by the defendants, and it was upon the altered plans that the plaintiffs were claiming. In a case like this he would not expect alterations to be made in the drawings except in regard to minor details.

The hearing was again adjourned.

ENQUIRIES ANSWERED.

Ownership of Architectural Drawings.

X. (Glasgow) writes: "Can you refer me to a legal case in which, some years ago, the ownership of architectural drawings was decided?"

—The last important case of this kind was that of Gibson v. Pease, which was determined in the Court of Appeal in March, 1905. In this case the precedent in Ebdy v. McGowan (1870) was followed, and it was decided that the plans and specifications were the property of the client.

Responsibility for Damage by Wind.

B. B. H. writes: "If damage by wind is done to a building before builder receives final certificate, can the architect compel the builder to make good at builder's own expense?"

—Full particulars of the extent and character of the damage, and acquaintance with the exact terms of the contract, would be necessary to the formation of a sound opinion on the point; but, speaking generally, and in the absence of details, the assumption is that the builder is responsible; but possibly there may be conditions that would warrant a proposal that the expense should not fall entirely upon him.

Qualifying for Munition Work.

C. P. (Bexhill-on-Sea) writes: "In your Journal of January 12, page xii., you have a short article on 'Architects and Munitions of War.' Can you give me further particulars of this, where I should apply, etc., or forward this letter on to the right quarters? I am 29, used to all kinds of wood-working tools and machinery, so suppose I could easily adapt myself to what is required. I have recently returned from Australia, where I was in the employment of the Government and can show a good reference from them. I am ineligible for Army and also out of work."

—Application should be made to the Ministry of Munitions, 6, Whitehall Gardens, S.W.; but in order to qualify for such employment it would be advisable to take the munitions course arranged by the London Council, who should be addressed at their Education Department, Victoria Embankment. A letter addressed to the I.C.S. would probably elicit helpful information.

THE CALDARIUM OF THE BATHS OF CARACALLA.

In publishing in our issue for January 5 the two views of the Caldarium of the Baths of Caracalla at Rome, from drawings by Mr. Walcot, we should have made acknowledgment to Mr. Mark H. Judge for the accompanying letterpress, which formed part of an article contributed to the "Architectural Review" by Mr. Judge, with whom, it may be added, Mr. Walcot had collaborated in working out the restorations.

NEWS ITEMS.

Change of Address.

Mr. R. Stephen Ayling, F.R.I.B.A., has removed his offices from 8, Dartmouth Street, Westminster, to Bedford House, 8, York Place, Baker Street, W. His new telephone number is Mayfair A522.

Housing at Greenock.

Greenock Corporation have decided to erect cottage houses for workers at the east end of the town, estimated to cost £35,000, of which the Admiralty is willing to pay a share.

Large Housing Scheme for Sheffield.

The Estates Committee of the Sheffield Corporation have decided to erect 261 houses at Wincobank for the accommodation of munition workers at the east end of the city.

Cement Waterproofing.

In order to prevent water percolating through the cement work of the propagation pits in the Botanic Gardens at Glasnevin, Dublin, the powder Pudlo has been employed with satisfactory results.

War Bonus for Carpenters and Joiners.

The West Bromwich and District Association of Master Builders have granted a war bonus of ½d. per hour, from January 3, 1916, to the carpenters and joiners of this district, to terminate three months after the termination of the war.

Remission of Subscriptions from R.I.B.A. Members with the Forces.

The Council of the Royal Institute of British Architects have decided to remit the subscriptions and contributions due on January 1, 1916, from all Members and Licentiates serving with the Forces who make a written application for such remission before July 1 next.

New Pier at Dundee.

On January 12, the new pier erected by Dundee Harbour Board on the Tay river front was opened for traffic. The construction of the pier, with the warehouses, has occupied several years, and it is the first instalment of a continuous river wall. The waterways are sufficient to admit large and heavily laden steamers at all states of the tide.

A.A. Service Committee.

The following is a list of additional subscriptions received by the Architectural Association Active Service Committee:

	£	s.	d.
W. H. Rees	0	10	0
Mrs. Nightingale	0	10	6
A. Watson	1	0	0
Robson Sons, Ltd.	1	1	0
John Mowlem, Burt Co., Ltd.	20	13	3
J. Crockerell	3	3	0
Mrs. Odell	2	0	0
Miss Florence Coles	0	10	0
Mrs. Falkner MacDonald	2	2	0
J. Simpson	3	3	0
H. Falkner	5	0	0
	£39	12	9

The hon. secretary of the committee is Mrs. Maurice E. Webb, to whom any further donations should be sent, at 18, Tufton Street, Westminster.

Newport Master Builders' Association.

At the annual meeting of this Association, which was held at the King's Head Hotel, Newport (Mon.), Mr. R. W. Moon presiding, votes of thanks were accorded to the retiring president, Mr. Robert W. Moon, and the vice-president, Mr. Charles Shopland, for their valued services. The senior auditor, Mr. Fred Leadbeter, was elected president, and the junior auditor,

Mr. E. W. King, was elected vice-president; Alderman W. M. Blackburn was re-elected hon. treasurer. Mr. E. W. King senior auditor, and Mr. Ernest E. Jenkins junior auditor, and for the sixteenth year Mr. Richard Richards was re-elected secretary.

With the Forces.

In connection with the illustrations of the Munster and Leinster Bank, at Cork, in this issue, it is interesting to record that Second-Lieutenant B. P. Hill, R.G.A., second son of Mr. Arthur Hill, M.A., B.E., has been mentioned in despatches by Lord French, while Mr. Hill's eldest son, Mr. Harry Hill, architect, holds a commission in the Royal Engineers.

TRADE AND CRAFT.

Carron Patent "Stella" Silent Gas Fires.

Messrs. Carron Company, whose works are at Carron, Stirlingshire, and Phoenix Foundry, Sheffield, and whose London showrooms are at 15, Upper Thames Street, E.C., and 50, Berners Street, Oxford Street, W., have issued a special booklet illustrating their patent "Stella" silent gas fires. Among the several qualities claimed for these fires is their absolute silence, which strongly recommends them for use in hospital, sick room, or study. They are described as having also an exceptionally high radiating efficiency. A penetrating, radiant heat is emitted immediately they are lighted, a bright red glow being equally distributed over the entire surface of radiants, without any appearance of flame. Thus radiant heat and light are combined with effective ventilation; no products of combustion can possibly escape except by the proper channel, the flue. Lighting-back is entirely obviated, and there are no troublesome regulators to adjust. These fires, which are easily adapted to existing fire-grates, are of neat, simple, and compact design, and of fine finish—in armour-bright, Cymric (a new Carron finish resembling armour-bright, but rust-proof), bronze, or enamel.

GREAT DEMAND FOR FACTORIES.

Messrs. Leopold Farmer and Sons, in their review of 1915, state that the sales and letting of factory property, wharves, land, etc., show far better results than was the case in 1914. This result is in a large measure due to the war, which has produced a great demand for factories and commercial property of all descriptions. An unprecedented demand still exists for properties of all kinds. Premises that previous to the war had failed to find tenants for years have been rapidly taken up, owners in many cases having obtained, through competition, increased prices to those asked.

Many factories have been disposed of to the Government, Government contractors in all branches of manufacture, English firms starting to manufacture goods previously imported (now barred through the war), and Belgian manufacturers who largely exported goods to this country, but were prevented from doing so now owing to their works having been destroyed by the Germans. To say the industrial world of England is busy is a mild term to use; it is in the throes of a boom, and so far as one can judge, is likely to be for some years to come.

A NOTABLE STAINED-GLASS WINDOW.

Mr. Leonard Walker has been showing at his studio in London a large five-light stained-glass window designed and executed by him for St. Chads, Newcastle. Like every artist who has made a study of the early coloured windows of the great Gothic cathedrals in France, Mr. Walker dispenses as much as possible with painting on the glass, and prefers to obtain his effects in the only legitimate way; that is, by the rich colouring of the leaded glass sections, a variety of shades being produced by the varying thickness of the transparent material. The subject of his window is the Resurrection. The design, says a writer in the "Observer," is clear and simple, and the colouring, with its sumptuous reds and blues, has a jewelled splendour which marks a distinct advance over the anæmic tints which were the fashion in stained glass before the advent of the recent revival.

GRAIN ELEVATOR PLANT.

The John S. Metcalf Co., Ltd., has been retained by the Chicago and North-Western Railway Company to act as designing and consulting engineers for their new grain elevator plant at South Chicago. This plant will be operated by the Armour Grain Co. and is to be the largest and most complete grain handling house and storing house yet designed by elevator engineers. It comprises a working house of a million bushels capacity, with facilities for receiving grain at the rate of 360 cars in ten hours, and shipping to cars at the same rate. It will also be arranged to dry 90,000 bushels of grain and bleach 240,000 bushels of oats in ten hours, besides enormous clipping and cleaning capacities. There will be a marine tower for receiving from vessels at the rate of 20,000 bushels per hour, and a river house equipped to ship to boats at the rate of 120,000 bushels of grain per hour, and with a shipping gallery to carry grain out along the wharf for trimming the vessels after they have received the bulk of their load at the river house. Between the working house and the river house there will be a storage house which will bring the ultimate storage capacity of the plant to approximately 10,000,000 bushels. All the machinery will be electrically driven, deriving power from a complete independent power plant of 4,700 h.p. Water tube boilers and turbo-generators will be used. Complete facilities will be provided for collecting the dust caused by the handling and cleaning of the grain and for sacking this dust or loading in bulk.

The John S. Metcalf Co., Ltd., whose head office is in Montreal, Canada, with branches in London (36, Southampton Street, Strand) and Chicago, has for many years been prominent in the designing and construction of the enormous grain handling plants in Canada and the United States. The firm also designed and constructed the first Manchester Ship Canal elevator, and the elevator just completed at No. 9 Dock was also designed by them and erected under their supervision. At the present time they are engaged on the designs for the silos and grain handling plant for Messrs. Guinness's new brewery at Trafford Park, Manchester, which will be the most extensive of its kind yet erected in this country.

PUBLISHER'S ANNOUNCEMENT.

THE question of the cost of Advertising is governed entirely by the circulation of a publication. The prices for small Advertisements enumerated below are framed upon the lowest possible basis in order to allow the use of the columns of the Journal for "Wants," &c., at a figure well within the reach of everyone.

Advertisers are purchasing the circulation of a paper in buying space for their announcements, and we are able to announce that "The Weekly Nett Sale of The Architects' and Builders' Journal is larger than that of any other Architectural Journal."

Appointments Wanted.

4 lines (about 28 words) 1s. 6d.; 3 insertions, 3s.

ADVERTISER seeks engagement in builder's office; well up in all building works and office routine; over military age; active and reliable; can give first-class references.—James, 221, Brockley Road, S.E.

ARCHITECT'S Assistant (over Army age) desires engagement; detailing, tracing, colouring, and general office routine; moderate salary.—Apply Box 723.

A.R.I.B.A. (ineligible for Army) desires engagement; seventeen years' architectural and engineering experience, both in London and New York, in the design and construction of all classes of buildings; special knowledge of steel construction.—K. B., 5, Asmun's Hill, Hampstead Garden Suburb, London.

ASSISTANCE rendered to builders and decorators by a life experienced Estimator; variations, accounts; salary or terms; not eligible.—S., 12, Cressida Road, Upper Holloway, N.

BUILDER and Decorator's Estimating and General Clerk desires engagement; permanent or temporary; life experience; well up in all branches; first-class references; not eligible.—S., 12, Cressida Road, Upper Holloway, N.

BUILDER'S General Foreman disengaged; over twenty years' experience as above; used to large jobs; town or country; trade, carpenter; experienced in all branches; excellent references.—W., 31, Dinsdale Road, Blackheath, S.E.

CLERK of Works disengaged; thoroughly competent; public and private buildings; well up all trades, measuring, etc.; first-class testimonials; abstainer; used control large staffs.—F. Evans, Ingle-side, 5, Kingsley Road, Palmer's Green, N.

CONTRACTOR'S Timekeeper or Sub-Cashier seeks re-engagement; eighteen years' experience on public works; well up in abstracts, prime cost; good references; abstainer.—H. Gilbey, 53, Harwood Road, Fulham, London, S.W.

FOREMAN or Overseer seeks berth; thoroughly competent; above military age; life experience in all branches of the building trades; good manager of men; free at once.—Box 692.

GENERAL Foreman seeks re-engagement; town or country; new or alterations; carpenter by trade; just finished hutments; good references.—C. H., 6, Marshall's Road, Sutton, Surrey.

GENERAL Foreman seeks re-engagement; just finishing four Government jobs; twelve years' experience; new, alterations, camps; highest references for ability and quick work.—C., 8, Hestercombe Avenue, Fulham, S.W. 724

GENERAL Foreman requires work; used to new and alteration jobs; good references; aged 50; trade, carpenter; wages moderate.—Riches, 115, Burges Road, East Ham, E.

LATE Manager of Works (10 years) requires similar post for the erection of fireproof and other buildings (permanent and temporary). Erected: Sanatoria, hospitals, military barracks, halls, bungalows, etc., various parts of England, Ireland, Scotland, and Wales; fireproof floors and partitions (photographs).—Box 729.

LONDON Estate Surveyor (43) seeks appointment or temporary work on plans surveys, dilapidations, valuations, assessments, sanitary surveys and reports, and general management of house property.—C., 24, Alexandra Road, Hemel Hempstead.

THE Association of Builders' Foremen and Clerk of Works, 56, Old Bailey, E.C.—Experienced Foremen and Clerks of Works can be obtained by applying to the Secretary, Mr. J. W. Sawyer, 214, Clapham Road, S.W. Competent foremen and clerks of works are invited to join this Association.

WANTED (Labour only) Brickwork, Pointing, Dilapidations, Roof Repairs, Drains, etc.; old or new work, by rod, or job; large or small jobs; any distance; good references.—Apply J. Watson, 17, Gascony-avenue, Kilburn, N.W. 727

Appointments Vacant.

6d. per line.

ARCHITECTS' WAR COMMITTEE.

The Professional Employment Committee have under consideration certain schemes of work with a view to affording small temporary employment to architects who are without work in consequence of the war. Applications can only be considered from British architects dependent on their profession for a living, whose present difficulties are directly due to the war, and who are not eligible for military service. Applications should, in the first instance be made to the Hon. Secretary of the Professional Employment Committee of the Architects' War Committee, 23, Bedford Square, W.C.

BUILDER'S Prime Cost Clerk wanted in City Office; over military age or ineligible for service.—Write, stating terms, experience, qualifications, Box 728.

GOOD Carpenter and Joiner wanted for shop and outside work; wages 1s. hour, or would arrange piecework if desired.—Apply King, 60, Southgate Road, Hackney, N.

JUNIOR Assistant (unfit for military service), with knowledge of shorthand and typing, required immediately.—Apply, in own handwriting, W. G. R. Sprague, 10 and 11, Jermyn Street, Piccadilly.

Miscellaneous.

6d. per line.

TYPEWRITING; architects' and builders' specifications, etc.; testimonials and soldiers' letters copied; prompt, cheap, and accurate; send for price list.—Address, "Typist," Typewriting Office, 65, Marsham Street, Westminster. 725

SECOND-HAND Optical Mart

For the Purchase and Sale of
LEVELS, THEODOLITES, DRAWING INSTRS.—Clarkson's, 338, High Holborn, London, W.C. (Opposite Gray's Inn Road).

TO ARCHITECTS COMPETING. SCHEMES AND ESTIMATES FOR ENGINEERING WORK.

(Lighting, Heating, Ventilation, and Sanitation), and Architectural Metal Work, supplied free of charge of **STRODE AND CO. Ltd.**, 48, Osnaburgh Street, London, N.W., and 18, Easy Row, Birmingham.

BOOKS.—Books on Building Trades, Engineering Educational, Literary, Technical, and all other subjects; second-hand at half prices; new at 25 per cent. discount; catalogue free; state wants; books sent on approval; books bought; best prices given.—W. and G. Foyle, 121-123, Charing Cross Road, London, W.C.

DRAWINGS, TRACINGS, STEELWORK, ETC.

Designs Carefully Executed by
THE NEWCASTLE DRAWING OFFICE,
Post Office Chambers, NEWCASTLE-ON-TYNE.
[Photo Prints—Blue, B. and W., etc.] 726

POLING boards, selected length and thicknesses, best quality and full measure, also scaffold boards, putlogs, scantlings, deals, batten and boards; lowest wharf prices.—C. H. Glover and Co., Ltd., Importers, Hatcham Saw Mills, Old Kent Road, S.E.

Contracts Open.

9d. per line.

IRLAM URBAN DISTRICT COUNCIL. ARTISANS' DWELLINGS.

The Council invite TENDERS for the building of 75 Houses on three sites, as follows: 32 houses on site No. 1, 23 on site No. 2, and 18 on site No. 3. The contractor may quote for the whole of the houses or any one or more for the whole of the drawings, conditions of contract, and specification may be inspected and copies of the bills of quantities and forms of tender obtained on application to Mr. Roland H. Winterbottom, Surveyor, Council Offices, Irlam, on payment of £5, which will be returned on receipt of a bona-fide tender and return of bills of quantities. Envelopes containing tenders must be endorsed "Tender for Houses" and be delivered to the undersigned not later than January 24, 1916. The Council do not bind themselves to accept the lowest or any tender.

JOSEPH COOKE,

Council Offices, Irlam.
December 24, 1915. Clerk to the Council.

Auction Sales.

9d. per line.

IMPORTANT SALE, WITHOUT RESERVE.
Re Carter and Banks, Ltd. By Order of the Liquidator.
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THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, January 26, 1916.

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PORCH OF A HOUSE AT LYME REGIS.

(From a pencil drawing by Harold Falkner.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

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TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1099.

EDITORIAL.

FRANCE, like Great Britain, has become acutely conscious of the necessity for scientific mobilisation of industrial forces. In the Senate, M. Audiffred has introduced a proposition for the better representation in Parliament of national interests that are commonly subordinated to the exigencies of factions. His object is thus expressed: "The proposition I have the honour to submit to Parliament has a specific and very definite aim—namely, to permit the access to Parliament, apart from all political predilection, of a certain number of persons competent to expound and discuss general questions that are of vital interest for the country," and are for that very reason, one may be pardoned for adding, instinctively avoided by the professional politician unless he can find some means of turning them to party account; or it may be that he shirks them through a realisation of sheer incompetence to deal with them. Thirty-six years' experience of Parliament has convinced M. Audiffred that while talent is abundant, there is usually a plentiful lack of special knowledge on subjects that require it, and that, as a consequence conscientious members naturally withhold their hands.

For remedy, M. Audiffred suggests the creation of a special college to be invested with power to elect to the Senate and to the Chamber of Deputies a restricted number of persons competent to deal impartially with matters requiring expert knowledge and skill. Unhampered by any obligation to flatter the prejudices of a popular constituency, they would be free from all political responsibility, and would not be required to devote to mere politics the energies and talents that would be more properly devoted to the science, art, or business that they had made the study of their lives. In our own country the need for detached and knowledgeable treatment of problems that are too intricate or too delicate to be handled by a scratch assembly of legislators is at least as great as it is in France; yet the proposed remedy, although it may possibly jump with the French genius, could hardly be applicable here. Its principle gets a glance of recognition in the electoral power conferred on a few favoured universities, with a good deal of benefit, no doubt, to the interests of those corporations, but with imperceptible advantage to the community at large. Moreover, university representatives are often among the most bigoted of political partisans. Clearly, then, amplification of this system will not serve. Sentimentally and socially, it might be a fine thing for the R.I.B.A. to have the privilege of electing its own representative to the House of Commons, and even to nominate a life-peer to the House of Lords; but the internal effect of the privilege would be fearfully demoralis-

ing. New and stringent conditions of competition would have to be drafted; and an undesirable element of "engineering" would resist all efforts to exclude it.

Happily the Institute is in no great danger of internal rivalry and dissension from this cause. Nevertheless, it ought to possess some means more direct and certain, not to say less humiliating, than "lobbying." M. Audiffred's proposal may not provide a real remedy, but there is no doubt as to the acuteness of the disease. There is undoubtedly much work thrust upon Parliaments, in this and in other countries, which they are constitutionally unfitted to perform; and the system of delegating it to semi-independent committees is not altogether satisfactory. Excellent work has no doubt been done by these committees; but the methods of appointing them leave much to be desired; and whether a committee is appointed or not depends too much upon chance. If such electoral colleges as those proposed by M. Audiffred were formed, the institution of such enquiries would follow regularly and automatically, if the college-elected members did their duty. It is very doubtful, however, whether the introduction of highly qualified professional and business men into Parliament in this country could be satisfactorily arranged. Either they would become quickly infected with the *virus politicus*, and thus robbed of their efficiency; or, being denied the privilege of taking part in the general proceedings, and thus missing the stimulus of public life, they would settle down into mere somnolence. Nor could they be admitted to Parliament in sufficient numbers to be fully representative of the multifarious and often conflicting interests involved.

Although the problem is beset with difficulties, there is no doubt whatever that it clamours for solution. As in France, so in this country, vital interests are at stake. We can no longer afford to leave to precarious chance—or to private effort, which comes to pretty much the same thing—the organisation of science and art, education and training, business and charity, or any other matter that is obviously of national importance. Private effort has indeed, in all these directions, produced splendid results, which, however, are incommensurate with national needs. Merely to increase them will not suffice. They must be co-ordinated and controlled in such a manner as to prevent the waste that, in the present lack of systematic conservation of energy, goes on at an appalling rate. To cite instances would be invidious. Besides, it would be unnecessary. Everybody knows that the independence or isolation of institutions that should be linked up for the sake of

economy and to reciprocal advantage is wasteful in the extreme. It is as if every householder in a town were to install his own gas-generating or water-pumping plant, instead of sharing with his neighbours supplies from the mains.

* * * *

Centralisation has been coming along for many years, but has been subject to much reaction, and has not made much progress. It is seldom constructive. For example, the Board of Education is mainly permissive or prohibitory. Again, for years past, London University has greatly strengthened its position and authority by linking-up—very loosely, it is true—a number of affiliated colleges. Similar movements towards consolidation are everywhere observable, and surely we are approaching the psychological moment for the State to constitute itself the sun and centre of an orderly system. Of "State interference" we have had perhaps more than enough, and of State-aid too little; these functions should be combined in more just proportions. In doing this, account must be taken of the tone, temper, and traditions that infest Government Departments, and would probably stultify any of the new special Ministries—of Commerce, of Education, of the Fine Arts, and so forth—in which a certain type of reformer sees salvation. A bolder proposal than that of M. Audiffred would be for the formation of a Third Chamber—a Chamber of Public Utility, elected by special constituencies, and invested with legislative powers, its transactions subject to revision by the two older Houses, but not held directly in bondage to the whims, ignorance, and prejudices of a popular electorate, while, on the other hand, shorn of the case-hardened coat-armour of the merely administrative Government Department with its eternal *Non possumus*, and lifted clean out of the miry trench of *ultra vires* in which municipal corporations are wont to take shelter.

* * * *

In some particulars "Go-ahead America" lags far behind "sleepy England." As an instance, Columbia University has just invited three architectural societies of New York City to elect three practising architects each, to form a committee of visitors, "whose advice, as based upon periodic inspections of the school's plant or equipment, current work and mode of teaching, could be depended upon as a guide in checking up scholastic results by professional standards and demands." This arrangement is hailed as a "Praiseworthy Innovation at Columbia." In this country, such appointments are a commonplace of educational organisation; and to us the solemn assurance of an editorial writer in the "Architectural Record" that "the committee of visitors will not attempt to govern, but to advise: the technicalities of administrative control will remain as before in the hands of the administrative board," seems wholly superfluous. A notable—not to say dazzling—array of names of the visitors elected carries conviction that what our contemporary, by a slip of the pen, implies as an "attempt to advise" will be eminently successful if steadily maintained. It is thus composed: From the New York Chapter of the American Institute of Architects, Bertram G. Goodhue, Charles A. Platt, and Egerton Swartwout; from the Society of Beaux-Arts Architects, Thomas Hastings, Henry F. Hornbostel, and Lloyd Warren; from the Alumni Association of the School of Architecture of Columbia, Goodhue Livingston, John Russell Pope, and I. N. Phelps Stokes. Truly an imposing list. But why do these gentlemen belong to so many different societies? If this fact indicates the wide divergency of views natural to strong individuality,

Columbia University may find the advice rather variegated, and the medicine will have to be well shaken before taken.

* * * *

In the January issue of our above-cited contemporary, Mr. Glenn Brown continues his extremely interesting "Personal Reminiscences of Charles Follen McKim," of whom he relates several delightful anecdotes. One in which Saint Gaudens the sculptor betrays a somewhat Whistlerian temperament is related in the words of McKim: "The conversation reminds me of an afternoon in Saint Gaudens' studio some years ago. The wonderful statue of Farragut, just finished, was on exhibition, and a lady, handsomely dressed and stately in carriage, came in. I retired, and Saint Gaudens carried her in to see the statue. After a short time Saint Gaudens returned with a cheerful countenance and whistling merrily. I said, 'Well, Gus, I know she must have been pleased with the statue, as you are so gay.' 'No,' he said, 'She did not like it. If she had, I would have known it was bad.'" For this quaint turn of thought, or "rule of contraries" Saint Gaudens may have been less indebted to Whistler than to Mark Twain. The jokes about which the serving-man he used as a "foolometer" looked portentously solemn Twain always decided to publish. Those at which the man happened to laugh Twain promptly destroyed.

* * * *

A writer in the engineering columns of the "Standard" drops the hint that "many architects who are suffering from a dearth of commissions will be well advised to devote a portion of their leisure to the study of reinforced-concrete construction." Having ourselves repeatedly urged that young architects whose taste is mathematical rather than æsthetic might find congenial and lucrative employment in this field, it follows that we think our contemporary's advice quite sound. We should like to believe that it is also opportune; but, unfortunately for this view, all the men whose "modulus of elasticity" is most favourable are with the colours. Those disqualified by age for war service will hardly care to begin to qualify as reinforced-concrete experts, although the temptation to do so is certainly strong, seeing that the demand for factories is so rapidly increasing, and that reinforced concrete is the material from which probably the vast majority will be built. But even the man of middle age, provided he is of adaptable temperament and has a decided turn for mathematics, may find it worth while to take up the subject with vigour and determination; this being the one direction in which, for the moment, the prospects are distinctly bright.

* * * *

A correspondent whose letter we hope to print next week betrays much alarm at the prospect of a statue to Shakespeare being erected in Whitehall. He has our sympathy, but we believe that his fears are groundless. For such an enterprise the time is out of joint; and it is not easy to conjure up the name of any sculptor of eminence who would care to attempt what must at best be but a fancy portrait of the poet. Moreover, an adequate monument of this kind would be almost as costly, and could not be concluded as quickly, as the fine memorial theatre for which we were hoping. When at length the theatre is built, it should certainly give the sculptors their opportunity—but not for fancy portraiture of the poet himself. His range of characters would satisfy the ambition of a Phidias, a Leonardo, or a Michael Angelo; each of whom would have been well content to make his art subservient to architecture, whether or not the building was of his own devising.

HERE AND THERE.

DURING the past week Sir Frederick Treves has been telling the Press about the new "Star and Garter," which is to take form under Mr. Gilbert Scott's direction on the top of Richmond Hill, a permanent home for three hundred soldiers and sailors disabled in the War; and the Press has joined in a chorus of approval that "one of the ugliest hotels in Europe" has been swept away, so that nothing now remains of it but the annexe, itself in due time to be handed over to the joyous house-breaker. The racy "Londoner" of the London "Evening News" expresses exactly what was thought by most people with any pretensions to architectural knowledge. "It is not long ago," he says, "that I saw the 'Star and Garter' loathsome in the sun of a fine Sunday morning. I tell you that I feasted my eyes upon its doomed carcass. Not much longer would it cumber the earth where it defiles the fairest site in England on the crown of the hill at royal Richmond that was for so many ages the pleasure of kings. In its place we shall have a building long and low, a palace harbour for brave men broken in our wars. There upon pleasant terraces, in gardens and gallant groves, they will rest themselves after battle and heal themselves in that calm, looking out at evening and morning over the woods and the windings of Thames. The house, by royal command, shall still be called the 'Star and Garter,' a better name and a homelier than any 'Royal Institution for Disabled Soldiers and Sailors': we have not been happy with such names. Mr. Gilbert Scott will build the new house. He was the young man of genius to whom they gave the building of the new cathedral in Liverpool. If he will do at Richmond what shall blot out the memory of that arrogant mid-Victorian mass, that swollen public-house which was the 'Star and Garter,' I will forgive him his grandfather's Albert Memorial doings."

I am not going to champion the architecture of the late "Star and Garter." It belonged to the early 'seventies, when design was in a bad way, and its architect, the late C. J. Phipps, F.S.A., reached no higher qualities here than he did in the tall block which embraces the Carlton Hotel and His Majesty's Theatre in the Haymarket; but I certainly will say that Richmond Hill might have had set upon it a very much worse building than Phipps's. In style it was a version of the French château of the François Premier period, and as seen from the river especially its silhouette was quite pleasing. Only at close quarters did its Victorian elephantinism prove so aggressive. Then its worst offence became painfully apparent, the brick of which it was built

—a sort of whitish fire-brick, which refused all attempts of Time to soften its harshness. And the annexe which E. M. Barry added is not a whit less dispiriting.

The view reproduced on this page shows the "Star and Garter" as seen from Richmond Park; with the George II. gatehouse on the left and its dummy on the right (a hollow shell of lath and plaster put there to balance the real article). Looking at this we may briefly recall the successive buildings that have occupied the site. The beginning of the "Star and Garter" was an inn built in 1738 on ground belonging to Lord Dysart, whose then recent elevation as a Knight of the Garter, with the honour of wearing on his breast the Star of the order, provided the new inn with an appropriate name. By the end of the century there was a different clientèle, and a Richard Brewer ruined himself in providing a "first-class hotel" in place of the unpretentious original building. This "first-class hotel" was the one which, after a dismal beginning, blossomed forth in the 'twenties of the nineteenth century into the fashionable rendezvous which Thackeray talks about—the "Star and Garter" to which the Four-in-Hand Club used to drive down from London every Sunday, the favourite hotel for dinners and excursions out of town, the hotel which counted Marshal Soult and Louis Philippe and his family among its famous patrons. The spread of London and the advent of the motor-car spelt doom for it, and after its latter-day mournful, discarded appearance, a great building on a magnificent site which nobody could find use for, one is not sorry to see the site cleared for a better piece of architecture. We might, as I have said, have had a much worse building, but I am sure Mr. Gilbert Scott (who, it is worth passing mention, is giving his services gratuitously) will produce something decidedly better. We shall all be very interested to see his design for the "long, low, grey building" with arms spreading in a curve towards the Thames and with an Italian garden between.

I have never gone into the history of fireproof building, so I will not attempt to say what was the beginning of the business. One would have to go back a good way for examples, of course; the cave dwellings of prehistoric man must have been admirably fireproof, and in historic times we should need to take special account of the Roman manner of building. But among what may be called modern fireproof buildings the structure which Granville describes in his description of the palace of the Etat Major in Petrograd seems likely to claim paramount place. Writing in 1835, Granville says: "The Etat-Major is remarkable for another part and purpose of its building, which is perfectly unique in Europe, namely, a large and lofty hall of cast-iron, containing the archives of the whole Russian Army. Not a particle of wood is employed in the structure of this room, which is about 250 ft. long and 100 ft. wide. It is vaulted, the arches being supported by ten pillars. A semilunar window, placed close to the ceiling, immediately under each arch, lights the room. The floor, the arches, and the pillars, which are from 70 to 80 ft. high, are of cast-iron. Around the hall, which has the form of a parallelogram, with the two ends slightly circular, runs a wide gallery in an elliptical ascending spiral line, but with so gentle an inclination that on entering the room in the centre at one of its extremities, and nearly on a level with the middle height of the apartment, the eye catches not at first this singular disposition of the galleries. The floor and railing of the galleries are likewise of cast-iron. On these ascending



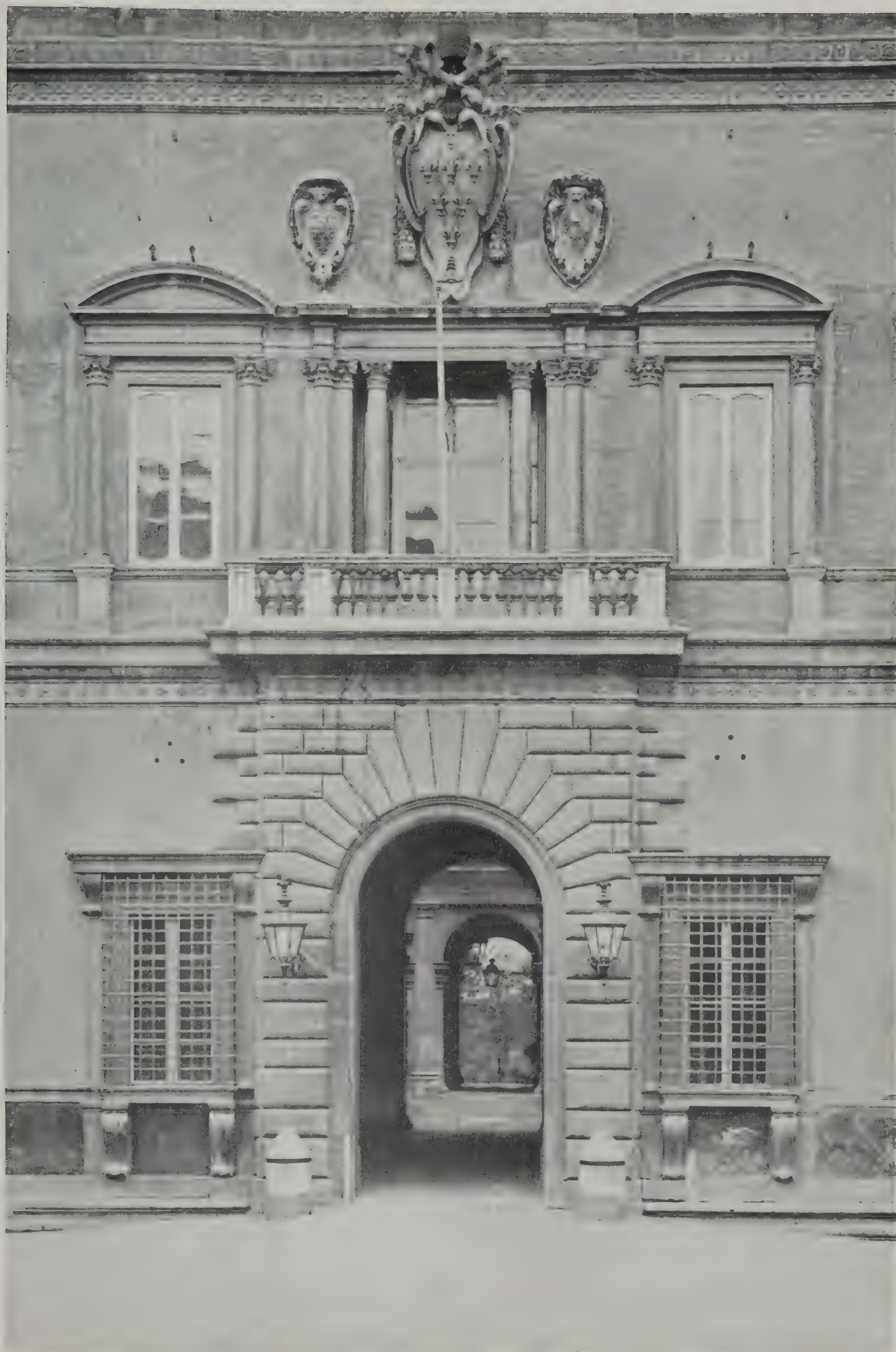
THE "STAR AND GARTER" HOTEL RICHMOND HILL.



DETAILS OF CRAFTSMANSHIP. XLVIII.—SPANISH IRONWORK: GILT REPOUSSÉ GATE ORNAMENTS.



SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.). XIX.—THE ELMS, EPSOM.



MONUMENTAL ARCHITECTURE. XLII.—FARNESE PALACE, ROME: DETAIL OF ENTRANCE.
DOORWAY BY SANGALLO; CENTRAL WINDOW BY MICHELANGELO.



LONDON FAÇADES. VII.—CRAIG'S COURT HOUSE, CHARING CROSS.



MONUMENTS. X.—MONUMENT TO MARSHAL MONCEY, PLACE DE CLICHY, PARIS.
GUILLAUME, ARCHITECT. DOUBLEMARD, SCULPTOR.



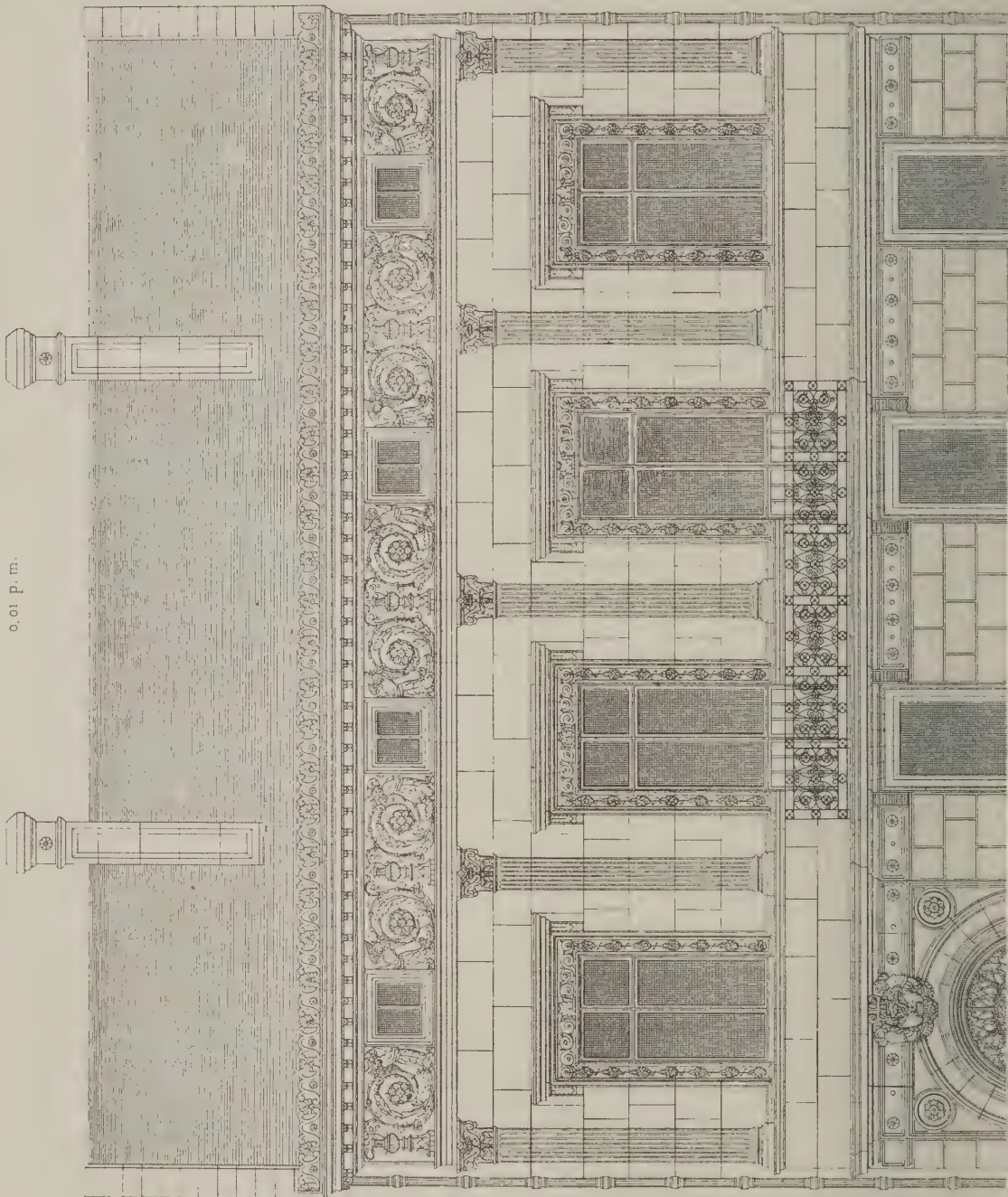
MODERN DOMESTIC ARCHITECTURE (SERIES II.). XXVII.—KELDY CASTLE, YORKSHIRE.

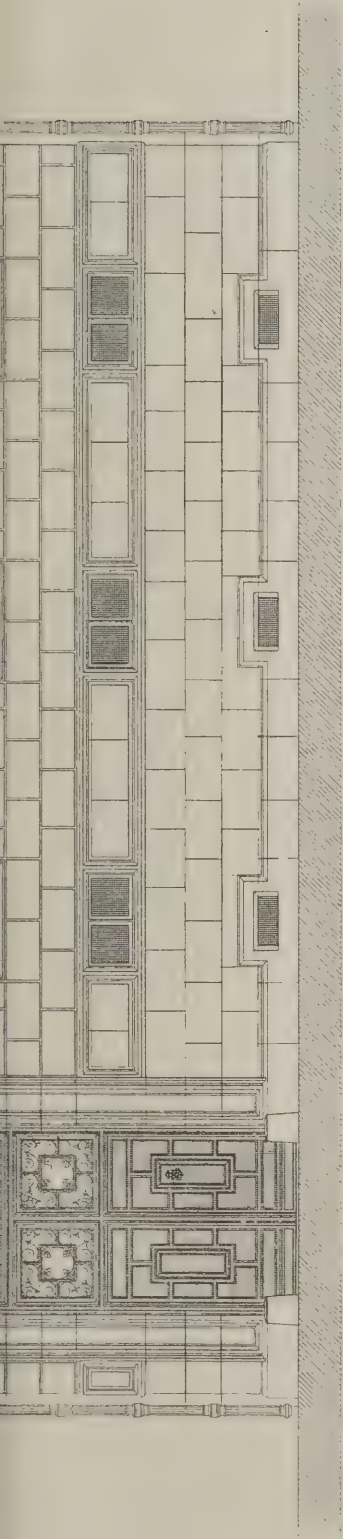
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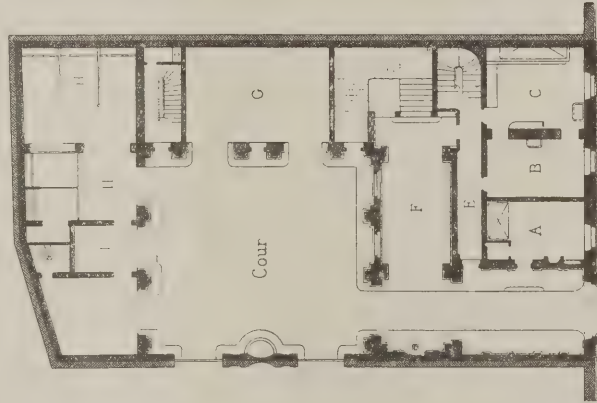
Façade sur la Rue

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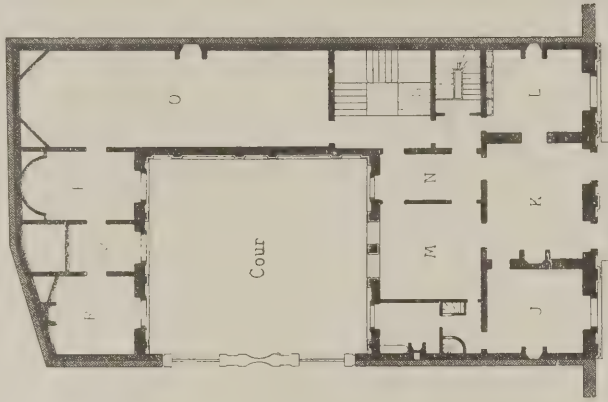


Plan du rez-de-chaussée



- A Entrée
- B Office
- C Cuisine
- D Salle à manger
- E Vestibule
- F Remise
- G Ecurie
- H Sellerie

Plan du 1^{er} étage



- J Chambre à coucher
- K Salon
- L Bibliothèque
- M Salle à manger
- N Antichambre
- O Galerie de Tableaux
- P Salle des Etrusques
- Q Verroterie
- R Chapelle

0 0035 p. m.

NINETEENTH-CENTURY FRENCH ARCHITECTURE. XIX. — HOTEL PORTALLES, PARIS.

J. F. DUBAN, ARCHITECT.

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galleries, five ranges of shelves are placed all round, one above the other, containing strong pasteboard boxes, having the appearance of very thick quarto volumes, in which the various papers and documents are kept. On the back of these upright boxes, or cartons, such systematic indications of their contents are written as will enable a clerk, having the catalogue, to find any given document in an instant. Behind this first range of shelves is a narrow and necessarily rather a dark passage all round, enabling a person to have access to a second similarly disposed range of shelves. In this Incombustible Hall of the military archives, all documents relative to military subjects from the year 1719, that is, from the infant years of the power of European Russia to its present adult state, are carefully preserved. The different years are marked in the corresponding divisions on a conspicuous tablet, and each box bears the numbers affixed to the documents it contains, as well as the date of the year or years to which they refer. The whole presents a contrivance of great ingenuity, and does great credit first to Signor Rossi, the architect, who devised the construction of the room, and, next, to the individual who arranged in such admirable order a mass of written information embracing a period of more than a century. The convenience of attaining the highest part of the building in search of a document, by an ascent so insensible that one scarcely perceives it, must be of the greatest importance to men of business. Besides this advantage, I understand that persons employed in the establishment, and who are thus compelled to lead a sedentary life, find health and relaxation in the permission of promenading up and down, about a dozen times at a turn, this spiral road of iron."

* * * *

There is one matter in this description which calls for brief comment. It concerns the use of cast-iron and the arrangement of series of boxes within rows of shelves. To-day we know that wrought steel is a better fireproof material than cast iron could ever hope to be, and to-day we should not use pasteboard boxes in a fireproof filing system: but it is suggestive to note that the modern method of metal structure and furniture is only an improvement on this very early model.

UBIQUE.

THE PLATES.

Spanish Ironwork.

SPANISH craftsmen are notable for their skill in fashioning ironwork, the finest examples of which are to be seen in the *rejas* of the cathedrals. Great elaboration of detail is a feature, as well as an extensive use of repoussé, often gilt and painted. The plate shows a group of repoussé gate ornaments arranged within a panel. The work is very characteristic of the Later Renaissance in Spain.

The Elms, Epsom.

The strong effects of light and shade which are produced on the façade by the unbroken stucco wall surface, and the strong shadow thrown by the widely projecting eaves, give to this house an appearance of the South.

Farnese Palace, Rome: Detail of Entrance.

Always our admiration for Antonio di Sangallo's magnificent Farnese Palace is tempered by the sad thought that its author did not live to see his designs materialise. Vignola its continuator, and Michael Angelo its finisher, may between them have made it nobler than Sangallo could have conceived. At any rate, architecturally, it is beyond challenge the

finest quasi-modern building in Rome. Another vain shadow of regret that intrudes upon contemplation of it is that the blocks of travertine of which it is constructed were taken from the theatre of Marcellus and from the Colosseum, of whose ruin, Gibbon says, "the nephews of Paul III. are the guilty agents, and every traveller who views the Farnese Palace may curse the sacrilege and luxury of these upstart princes." Moreover, the baths of Caracalla, of which the caldarium was illustrated in this Journal three weeks ago, were despoiled to make the granite basins of the fountains in the Farnese. Vignola laid down the basement of the court on the original plans of Sangallo, and himself designed the first storey; Michael Angelo being the author of the upper parts of the building, with its beautiful cornice.

Craig's Court House, Charing Cross.

Craig's Court is a little enclosure just off the top of Whitehall, on the east side. The house which dominates it—the residence of Earl Harrington—has a very finely proportioned façade, and may be regarded as one of the best examples of its period in London—about 1710. The actual architect is not known, but Captain Wynne is suggested.

Monument to Marshal Moncey, Paris.

The monument to Marshal Moncey, in the Place de Clichy, consists of a magnificent bronze group 19 ft. in height, raised upon a circular pedestal 20 ft. high, the joint product of Edmond Guillaume and Doublemard in 1869. The circular pedestal has an octagonal plinth decorated with bas-reliefs, and is crowned with an entablature of original design. Above, in a dramatic attitude, is the figure of the Marshal defending Paris against the allied armies in 1814. It is certainly a very striking monument.

Hotel Portalles, Paris.

As a house façade this is one of the most noteworthy examples of modern work in Paris; a curious blending of Italian and Classic motifs, most graceful and harmonious. Duban, the architect, died in 1870. A photograph of the front appeared in our issue for November 25, 1914.

Keldy Castle, Yorkshire.

This house was originally a moorland farm-house, to which was added, before the middle of the nineteenth century, a square block in the battlemented stucco manner, which converted it into a shooting-box, and gave it its name of "castle." A kitchen wing had been added before the property was acquired by its present owner, Mr. Philip B. Reckitt. In 1906-7 a drawing room wing was added to the west of the south front of the "castellated" part of the house, with an archway between the two which gave access to the entrance, then on the west. All this older part has recently been taken down and rebuilt, and joined up to the drawing-room wing. The entrance is now on the east side of the house, the new rooms on the south front (from the east) being the hall, smoking room, and school room. The tower behind contains the principal staircase, with a service stair in an attached turret. The hall is panelled in oak. The dado panelling of the smoking room came from Dr. Phené's collection, and originally (it is believed) from one of Wren's City churches; it is very similar in character to some work in St. Mary Abchurch (see "A. A. Sketch Book," 1911). The new work has been designed by Mr. John Bilson, F.S.A., F.R.I.B.A., and executed by Mr. Anelay, of Doncaster and York. We regret that it is not desired that we should reproduce the plan.

ILLUMINATION DEVELOPMENTS.

ILLUMINATING engineering as a distinct specialty is perhaps not generally understood. The name illuminating engineering (writes Mr. Preston S. Millar, of the Electrical Testing Laboratories, New York), as applied to this specialty is perhaps not wisely chosen. It will serve, however, for the purpose of this article.

The Materials of Illumination.

The materials of illumination may be classified as illuminants—natural and artificial—lighting auxiliaries, and fixtures.

Considering first incandescent electric lamps, it may be noted that increases in the efficiency of light production have been accompanied by increase in the variety of illuminants both as to types and sizes.

Advances in Efficiency.

Advances in the efficiency of light production have been marked. The carbon filament lamp which had remained without material efficiency improvement from 1893 to 1905 was at that time improved through the development of the so-called "metallised" carbon filament, and in that form remains the most efficient type of carbon filament incandescent lamp. The carbon filament lamp had been the standard form for general electric lighting, and continued to be the standard lamp and the most largely produced lamp until about 1912. Its pre-eminence was challenged before that time because of the adoption of the metallised carbon filament lamp for free renewal to customers by the larger central stations of the country, and was lost in 1912 as a result of the influence of lamp manufacturers in promoting the sale of the metallised filament rather than the sale of the carbon filament lamp. The substitution of the metallised carbon filament lamp for the earlier form of carbon filament lamp resulted in an increase of the standard of illumination throughout the country, for it consumed the same energy and produced about 20 per cent. more light than did the earlier carbon filament lamp.

Carbon and Tungsten Filament Lamps.

In 1905 the various forms of carbon filament lamps were supplemented by the tantalum lamp, an importation from Europe. This lamp never entered largely into American practice, its largest sale in the country probably never exceeding 3 per cent. of the total sales of incandescent lamps.

The tungsten filament lamp, first made available commercially in 1907, was a marked improvement over other lamps then available, although its fragility and relatively high price led to restriction of its use in the earlier years of its history. The substitution of the drawn wire mounted as a continuous filament placed the lamp in a class with the carbon filament lamp in respect to ruggedness. The development of bulb-blackening preventives has permitted its operation at somewhat higher efficiencies. These improvements, with notable price reductions, have led to the large use of the tungsten.

Recently a new form of tungsten filament lamp has been announced, in which the bulb contains an inert gas which reduces the rate of evaporation of the filament and permits operation of the lamp at a higher efficiency. This gas-filled Mazda lamp is chiefly of importance in the larger

sizes, and in effect creates a new lamp of characteristics similar to the incandescent lamp but of power equivalent to the arc lamp.

Larger Electric Luminants.

Paralleling the improvement in efficiency of light production by means of incandescent lamps have come improvements in larger electric illuminants. The pure carbon open arc lamp was supplemented in about 1893 by the inclosed carbon lamp, which largely supplanted it in spite of a lower efficiency because of more desirable operating characteristics. This inclosed carbon arc lamp has been for a number of years the standard street lighting illuminant of America, and only within the past two or three years has yielded its position of pre-eminence in that field to the newer and superior forms of arc lamps. The intensified carbon arc lamp has found considerable application in the lighting of interiors, principally stores. In this lamp pure carbons of relatively small diameter are operated at high current density within a globe which partially restricts the air supply. The resultant light is more nearly white than that usually obtained from the carbon arc lamp, and offers some advantages for store lighting purposes.

The metallic electrode arc lamp, of which the magnetite and metallic flame lamps are the principal examples, has come into large use in street lighting, and more than any other type of lamp has supplanted the inclosed carbon arc lamp. This lamp differs radically from earlier forms of arc lamps in that the light is produced by luminescence and emanates wholly from the arc stream, whereas in the several forms of pure carbon arc lamps the light is produced by incandescence of the electrode ends.

The flame arc lamp (short-life form) is the highest achievement in efficiency of light production among commercial electric illuminants. In its earlier forms it suffered from short electrode life, which made its operation costly and practically limited its usefulness in America to display lighting. In repetition of the history of the pure carbon arc lamp, the flame arc lamp, which is equipped with carbons impregnated with various salts, has been adapted to secure long electrode life by partially inclosing the arc and employing large diameter electrodes. As in the earlier lamp, this operating advantage has been secured at the expense of loss in efficiency, and the long-burning flame arc lamp is not to be confused with the more efficient short-life flame arc lamp in this respect.

The gas-filled Mazda lamp is among the very highest efficiency electric illuminants, especially in its larger sizes.

The mercury arc lamp is available in two types. The low-pressure arc in glass tubes is the earlier form and is in more general use than the high-pressure quartz tube lamp. The latter, however, surpasses it in efficiency.

The Moore tube, filled with nitrogen for general illumination purposes, has been used to a limited extent for special classes of lighting. Smaller sizes in which carbon dioxide replaces nitrogen are used only as artificial daylight.

The Neon tube, as devised by Claude of France, marks a distinct advance in the efficiency of tube lighting. Whereas the Moore nitrogen-filled tube yields light of a pinkish-yellow tinge, the Neon tube gives light which is red.

The Gas Mantle.

The development of the gas mantle in 1884 was the beginning of a new era in gas lighting. When the mantle burner was introduced there were available the flat-flame burner, producing one to two candlepower per cubic foot of 16-candlepower coal gas; the Argand burner, producing perhaps three candlepower per cubic foot; the regenerative burners, producing as much as seven to ten candlepower. The Welsbach lamp made available at first ten and, later, something like fifteen candlepower per cubic foot of gas. Beginning with about 1901, the number of sizes of lamps employing mantles was increased, and the production of an inverted burner was undertaken. By 1906 the inverted burner had attained a point of commercial success, and there had been produced a variety of sizes of upright mantle lamps, ranging from those consuming $1\frac{1}{4}$ cubic feet of gas up to the multiple burner lamps employed for lighting large areas and consuming twelve to eighteen cubic feet of gas per hour. Since that time this range of lamps has been realised in the inverted type, and various improvements have been made in structural features and operating qualities. Regenerative lamps have been produced and have entered to a limited extent into service in this country. These attain efficiencies of the order of twenty-eight candlepower per cubic foot per hour. Highest efficiencies from illuminating gas have been obtained by the use of pressed gas systems, used largely abroad for street lighting, but not as yet introduced extensively in this country. These yield light-producing efficiencies of the order of thirty-five candlepower per cubic foot per hour.

Other Illuminants.

Among other illuminants the kerosene oil lamp is, of course, the most important. Its earlier form was improved by the substitution of a round-wick, centre-draft lamp for the flat-wick burner. The incandescent mantle has been applied to the kerosene lamp, but without such success as to command general substitution in oil-lamp lighting.

One illuminant has been produced which yields light of a colour closely approximating what may be considered to be average daylight. That is the Moore carbon-dioxide tube. Mazda lamps, the intensified carbon arc lamp, and gas mantle lamps have been equipped with colour screens intended to modify the light to produce artificial daylight. Some of these duplications of natural light are excellent, and are being employed increasingly and with good effect for commercial purposes.

Lighting Auxiliaries and Fixtures.

Lighting auxiliaries, including reflectors, globes, shades, etc., have been greatly improved in recent years. Modern reflectors of various type or design surpass those previously available in appearance, and in that they conceal the light source and diffuse the light. They excel also in efficiency of light redirection.

The design and manufacture of fixtures may be divided into two classes; namely, fixtures of distinctive design and stock fixtures. The former cannot well be generalised; the latter, which, of course, are more largely used, have been improved somewhat with the improve-

ment in taste in regard to design which is gradually being wrought among the public at large. At least, it may be said that the atrocious fixtures which were placed in moderate-priced houses twenty years or so ago are now supplanted by more tasteful fixtures. Progress in recent years in the design and construction of materials of illumination has been rapid, and the report of recent developments must be considered to be encouraging in so far as the materials of illumination are concerned.

The Science of Illumination.

The science of illumination may be considered to comprehend engineering, vision, and æsthetics.

Considering first the principles of engineering in so far as they form a part of the science of illumination, it may be said that the subject of supply falls properly under the headings of electrical or gas engineering. The lighting practitioner must have a working knowledge of usual systems of supply, but no special knowledge is essential.

In the matter of installation the practitioner needs to be somewhat more skilled. The electrical contractor, plumber, etc., are prepared to handle installations effectively, but are in need of guidance of the illuminating expert; hence, the latter requires a good working knowledge of the subject.

A thorough knowledge of the design, construction, lighting qualities, and operating characteristics of artificial illuminants is essential, and this subject has not been neglected in the literature of the art. Daylight also has been studied as to direction, diffusion, intensity, colour, etc. Very complete information regarding sources of illumination is thus available to the practitioner.

The study of auxiliaries from the several view points of light distribution, light absorption, colour modification, dust depreciation, etc., has been an important part of recent developments in the field of illumination. The light distribution curve has become a familiar part of manufacturers' data, and has been influential in emphasising the importance of correct design and low light absorbing qualities for reflectors and globes. It has been shown that there have been marked improvements in the design of lighting auxiliaries. Likewise there has been a notable growth in the knowledge of the use of such devices and in the discriminating selection of the best available for given purposes. The literature of the art is rich in discussions of the physics of light production, optical principles, colour, etc. Knowledge of these subjects has been distributed rather rapidly through numerous presentations before organisations of men interested in lighting.

In the measurement of light, notable progress has been made in recent years. The measurement of total flux and light distribution in the laboratory and the measurement of illumination intensity and brightness in lighting installations has been developed and now forms a standard part of illuminating engineering practice.

Beyond the introduction of certain refinements which have promoted accuracy of results, there have been no important developments in the practice of commercial photometry during recent years. Probably the most important development in this field has been the reduction in the size of photometers, which has resulted in making portable photometers available for the study of illumination. A recent

broadening of the scope of such study has included the measurement of brightness as an important branch of photometry.

A number of investigators are engaged in the study of the problem of photometry by non-ocular means. The thermopile and the photo-electric cell, with possibly some alternatives, are looked to for assistance in the future. While nothing of commercial practicability has yet demonstrated its value, progress is being made.

The variety of colour values of the several important illuminants, and the other colour values which for scientific purposes must be measured, create a requirement for standards of light of several widely different colour values. There is a great need for a series of such standards which shall be authoritative by reason of the auspices under which they have been derived as well as by official designation. A number of laboratories are engaged in the study of this problem of heterochromatic photometry, and while concrete results in the establishment of such standards are not available yet, progress must be recorded in that the need for such standards is now definitely established and work is under way which should result ultimately in meeting this need. Present indications are that a range of calibrated colour screens offers a most practical solution of this problem.

Standards of Light.

Standards of light may be classified as primary, representative, and working standards. Primary standards, or those reproducible from specifications, are at present flame standards, respectively candles, the Hefner lamp, and the Pentane lamp. There have been no important developments in the way of primary standards of light in recent years, although certain means of arriving at a superior primary standard have been suggested and some research work has been done with that end in view. It is generally recognised that none of the existing primary standards of light is entirely satisfactory and that there is need for the development of a new and superior standard. Representative standards have been adopted and the so-called international candle is the official unit of light in England, France, and the United States. It is the result of standardisation work of the past few years, and the unit is now represented by groups of seasoned, calibrated incandescent electric lamps held at the official laboratories of these three countries. These form a reasonably accurate and safe standard for light of one-colour value. From them working standards are derived which accurately duplicate the value of the standard lamps and which are now available for general use of all who require them.

A start towards adopting a reasonable system of units and nomenclature was made at the Geneva Electrical Congress in 1896. The committee on nomenclature and standards of the Illuminating Engineering Society has been actively engaged in the furthering of this work. That considerable progress has been made will be testified by the several annual reports of the committee to be found in the transactions of that society. The subject of nomenclature is especially vexing, and the art is fortunate in having the services of so distinguished a committee to assist in the adoption of sound definitions, symbols, and nomenclature. Pressure is being exerted with a view to the adoption of the metric system, and some little progress appears to have been made towards this end.

The principles of physical optics and of magnetic flux underlie many calculations made in illuminating practice. Marked impetus was given to calculations of illumination by the application of the idea of luminous flux in commercial illumination design. In recent years the mathematics of the subject has been set forth repeatedly, and it may be said that calculations involved in illuminating engineering work are perhaps further along towards complete development than is any other branch of the subject.

The subject of costs is a fundamentally important feature of the science of illumination, and questions of first cost and operating cost, including maintenance and depreciation, must have the careful attention of the practitioner.

So much for the purely engineering aspects of the illuminating art. The engineering features are important, indeed essential, but other aspects are equally so. The subject of vision in all its ramifications forms an integral part of the science of illumination, a fact which is being given due recognition. Light must be correct in respect to intensity, direction, diffusion, colour, and steadiness; and to the study of these qualities a knowledge of visual processes and methods of perception is essential. Shade perception and visual acuity, together with colour perception, have been studied and discussed to an extent which begins to make known some of the more important facts pertaining to vision.

In this connection also the subject of contrast may be considered. A knowledge of the behaviour of the human eye under various conditions of contrast is all-essential to the science of illumination. Therefore the study of reflection and absorption of light and of brightness of surfaces is a prominent feature of the most recent advance in the science of illumination. Glare both from light source and from reflecting surfaces is largely a question of contrast, and its suppression in order to promote ocular welfare is one of the principal aims of the lighting practitioner to-day. Excessive brightness means excessive contrast with surrounding objects. Sometimes a light source which is so bright as to occasion discomfort amid dark surroundings becomes innocuous when amid bright surroundings. The general recognition of the need for contrast limitation has been effective in reducing contrast in modern installations.

Glare is intimately connected with diffusion of light. It is a subject to which a great deal of study has been given within the last few years. The results of laboratory experiments by Sweet on the effect of glare due to the presence of a light source within the field of vision show that while the conditions which he employed were extreme and the effect was exaggerated beyond that met in practice, yet the consequences experienced in ordinary installations differ from those found in his experiments only in degree. Glare due to exposed light sources means diminished seeing ability, discomfort, and possible injury to the eyes. Another effect also known as glare is that attending specular reflection from polished surfaces. This is a subject which has received especial attention during recent years. Glare of this kind is again a matter of excessive contrast. One views the imperfectly reflected image of a light source upon the page of a book, brightness of the image being far in excess of the immediate surroundings and the general surroundings.

(To be concluded.)

BOOK NOTICES.

A Manual of Timber Preservation.

That timber has many enemies is only too well known to the architect and the builder; but it is the building owner who is the chief sufferer from any failure to combat them. Their name is legion, for they are many; the more common of them being decay, insects, marine borers, mechanical abrasion, and fire. In the United States there has grown up a very considerable wood-preserving industry, comprising about ninety wood-preserving plants, representing a capitalisation of more than ten million dollars, turning out products worth about thirty million dollars a year, using annually more than a hundred million gallons of creosote costing more than seven million dollars, more than twenty-one million pounds of zinc chloride costing about a million dollars, and about three and a half million gallons of various other preservatives, while the total amount of wood treated approximates a hundred and twenty-six million cubic feet a year. These figures are here quoted as showing how clearly the importance of wood-preservation is recognised in America, and in the hope that they may chance to promote emulation in this country, where hitherto the subject has received less attention than it deserves. This object will be greatly promoted by the book under notice, which is not only extremely useful for its careful description of the various methods of wood-preservation, but contains also a very useful survey of the destructive agencies that must be counteracted for the prevention of accidents that may occur through the decay of timber, or—what is of no less importance—for the greater economy of the rapidly diminishing timber supply.

There is, as the author of this book shows, a reflex action of wood preservation on forest management: "By giving durability to woods which do not naturally possess it, the practice of wood preservation will in many cases govern the manner in which certain forests will be composed and managed. . . . Future stands of timber will often be composed of those species whose wood without the application of a chemical treatment would have such a limited demand that they could not be grown at a profit," while "wood preservation enables trees removed in thinning the forest to be put to a higher use than for fuel, and by so doing permits thinnings to be more systematically and effectively made." Forests, in short, are now being controlled and influenced by man in much the same way as he influences the breeding of horses, cattle, sheep, and poultry; with the vital difference that in the case of trees his control is much more strictly limited, cross-fertilisation being difficult or impossible, and the positions being reversed with respect to relative longevity. A man normally outlives, and can therefore control, many generations of animals, but a tree hardly attains to maturity in the lifetime of a man.

The summarised history of wood preservation begins with rather negative evidence from Egypt, which country, however, supplies in its embalmed remains of human beings the earliest records of the artificial preservation of organic bodies, although the coffins (commonly of sycamore) in which the bodies were placed were apparently given no special treatment, their durability being accounted for by the exclusion of the moisture necessary to the support of wood-destroying organ-

isms. Apparently the early Greeks and Romans smeared wood with essential oils from olives and cedars, and sometimes they bored holes in the wood and poured the oils into them. Charring was also a common practice among the Romans. But wood preservation probably received its first great impetus from the necessity of preserving British warships from the rapid decay which at one time threatened a national calamity. Railway construction, depleting the forests by its demand for sleepers, drew further attention to the subject, and during the first quarter of the nineteenth century many experiments were made on the modern lines of injection. Kyanising, it seems, was anticipated in Homburg in 1705, and by De Boissieu in 1767; Kyan's patent for treatment with mercuric chloride dating only from 1832. Similarly, although chloride of zinc had been suggested by Thomas Wade in 1815, and by Boucherie in 1837, Sir William Burnett's patent embodying this process was not taken out until 1838, in which year John Bethell (who had been anticipated to some extent by Franz Moll two years earlier) was granted a patent for injecting oils of coal-tar into wood enclosed in iron vessels.

In 1875 a creosoting equipment was installed at Pascagoula, Miss., for the treatment of timbers used by the Louisville and Nashville Railroad; and the success of this plant is to be inferred from the fact that it is still in operation and it may be regarded as the parent of modern wood-preserving plants, creosoting being the most favoured of all the various processes. Creosote is defined in a generic sense as meaning "the mixed phenols and phenoloid bodies obtained from wood-tar, coal-tar, blast furnace tar, shale oil, bone oil, or other sources"; but the author's carefully formulated definitions of creosote, coal-tar creosote, oil-tar creosote, wood-tar creosote, and mixed creosote it would be unfair to quote. His account of various typical wood-preserving plants is clear, succinct, and instructive; and the chapter on "factors which cause the deterioration of structural timber," with its illustrations of the ship-worm, the pole-borer, and other injurious agents, is as valuable as it is interesting. Altogether, the volume may be confidently recommended as an important addition to any technological library. It is fully illustrated.

"The Preservation of Structural Timber." By H. F. Weiss, Director, Forest Products Laboratory, U. S. Forest Service, etc. Pages xiv. + 312, 9½ in. x 6¼ in. Price 12s. 6d. net. (London: McGraw-Hill Book Co., Inc., 6, Bouverie Street, E.C.)

Engineering for Architects.

A contentious issue seems to lurk in the title of this book. Architects should have nothing to do with engineering as such, and the advocates of reprisals might suggest, as a counterblast, a manual of "Architecture for Engineers." While it is every bit as dangerous for architects to meddle with engineering as for engineers to make determined onslaughts on architecture, it is nevertheless certain that the two professions must occasionally overlap, and it is therefore well that each should know enough of the other's business to stop short of undue encroachment. In this respect at least the present volume should be valuable to the architect who is conscious of being less strong on the constructional side than modern developments of the science of building allow. For the architect in whom careful training has happened to coincide with a taste for mathematics and mechanics, this book

will serve to refurbish and perhaps to extend the knowledge already acquired. It deals very simply and plainly with the calculations and formulæ for beams, girders, columns, grillage-beams, and trusses, graphical methods of indicating forces and of tabulating stresses being shown in a useful series of diagrams.

"Engineering for Architects." By DeWitt Clinton Pond, M.A., Instructor of Architectural Engineering, Columbia University. Pages viii. + 104, 9 in. by 6¼ in., price 8s. 6d. net. (Humphrey Milford, Oxford University Press, London, E.C.)

Elementary Co-ordinate Geometry.

This book is intended as a first course in co-ordinate geometry for students whose general mathematical education is not as yet far advanced. The author's aim is to present co-ordinate geometry not as a new subject but as another method of investigation closely related to the branches of mathematics with which the student is already familiar. The selection of the subject matter has been well done, though the course proposed as a year's work would be a severe one for the student whose knowledge of algebra and trigonometry is as elementary as the earlier chapters of the book seem to suggest.

The latter portion, on some sections and the general equation of the second degree, demands a greater grade of skill and more mathematical experience than the student would be likely to acquire in so short a time.

The methods used are clear and direct, and the examples are well chosen and instructive.

"Co-ordinate Geometry: An Elementary Course." By Percy Coleman, M.A. (Clarendon Press, Oxford.)

A Manual of Furniture Making.

Wood being manifestly a noble material, all sorts and conditions of men are tempted to meddle with it, whether by merely whittling a stick, or by carving with the elaboration of a Grinling Gibbons, or by torturing plank and post into the more or less disreputable shapes inflicted upon us under the generic name of furniture. Robinson Crusoe started the craze for making one's own furniture, and William Morris, for all his assumption of peajacketed-sailor bluffness, was too weak to resist this compelling example. As there are multitudes of more feeble men than Morris, it follows that home-made furniture multiplies apace. If men are not to be restrained from this practice by tears, nor deterred from it by threats, the only remaining resource is to guide them in the right way of design and construction. A born bungler could not go very far wrong if he followed carefully the practical instructions given in this volume, which, with its clear description of details, and its abundance of well-drawn illustrations, is a complete exposition of the furniture-maker's craft, its teaching being conveyed by example more than by precept; the objects including almost everything that could be found in a furnisher's catalogue, from a bookslide to a bedroom suite. In the matter of design, the articles range through all grades of good, bad, and indifferent, the last-named quality predominating. There is no question, however, that the constructive details are sound and clear; and in this respect the book should be of great value, not only to the amateur craftsman or aspiring mechanic, but to teachers and students in schools that cultivate the handicrafts. As these schools, already numerous, must soon multiply suddenly

and rapidly when the demand for higher technical efficiency begins to materialise commensurately with national needs, this volume would seem to carry the assurance of usefulness and prosperity.

"Furniture Making." Designs, Working Drawings, and Complete Details of 170 pieces of Furniture, with practical information on their construction. By R. S. Flowers, John Bovington, and other Designer-Craftsmen. With 1,682 illustrations. Pages viii. + 404, 8½ in. by 6 in., price 5s. net. Cassell & Co., Ltd., London, New York, Toronto and Melbourne.

Russian Made Easy.

Whether or not the Russian language presents the formidable difficulties commonly attributed to it, there can be no question of its growing popularity in this country, nor of its increasing importance in commerce and in literature. It is rapidly superseding German as a subject of study in this country, and is hardly more difficult than German to acquire. From Hugo's Institute for Teaching Foreign Languages, 33, Gracechurch Street, E.C., we have received Part I. of "Russian Grammar Simplified," comprising exercises, key, and vocabularies, with the pronunciation exactly imitated, and Part I. of "Russian Reading Made Easy," containing anecdotes, dialogues, and an act of a modern Russian play, with inter-linear translations and a phonetic rendering of pronunciation. These books seem to have been prepared with the same accuracy and clearness that distinguish the application of "Hugo's Simplified System" to other languages, and certainly they are extremely well produced, the large and legible type robbing the Russian alphabet of its chief terrors, which are largely imaginary.

The Smithsonian Institution Report.

The annual report of the Board of Regents of the Smithsonian Institution contains within its 730 pages an interesting if somewhat heterogeneous collection of scientific papers. Architecture is less fully represented than usual, but among the many illustrations is one showing the approved design for the George Washington Memorial Building to be erected in Armory Square, facing the Mall, at Washington. The main feature of the building will be an auditorium to seat 6,000 people. Extracts from a paper on "Recent Developments in the Art of Illumination," by Mr. Preston S. Millar, are reproduced on pages 38 and 39.

LEGAL.

Builders' Claim for Work Done.

Maurice Fisher and Co. v. Lipowsky.

January 17. Official Referee's Court. Before Mr. Verey.

The plaintiffs in this case were a firm of builders carrying on business at Rayleigh, in Essex, and they claimed £79 12s. 4d. "for work done and money expended at the request of the defendant" at Turret House in the village of Hockley, near Rayleigh. The work was done between November, 1914, and May, 1915, and four separate accounts were sent in to the defendant in respect of it, some for labour and others for materials. Payments on account were made from time to time, leaving the balance claimed. There was no contract in writing, but plaintiffs, through their counsel, said that the work was done upon instructions received orally from the defendant. The total amount for labour and materials was £229 12s. 4d., of which £150 had been paid, leaving the balance of £79 12s. 4d. The defendant, on taking Turret House,

in October, 1914, was first brought into touch with the plaintiff firm, and at first he only wanted some small repairs done, but as time went on his requirements were added to, and he personally gave his orders to the plaintiff, so that there were no letters or written contract to be relied upon.

A considerable amount of evidence was taken on both sides, and in the result the Referee found for the plaintiff for £76 9s. 7d., with costs.

Lift Builders' Radius Agreement: Alleged Breach of Covenant.

Mair v. Glennie.

January 14. Chancery Division. Before Mr. Justice Younger.

This was a motion by the plaintiff in the action which in form asked that a writ of attachment might issue against the defendant, Adam Glennie, of Middlesbrough, for breach of an order made by consent in 1914 restraining him from carrying on a lift builder's business within a radius of twenty miles of Newcastle.

Mr. Sheldon, who appeared in support of the motion, said that for some time the parties carried on business in partnership as lift builders and hydraulic engineers. That partnership was dissolved in 1913, the plaintiff taking over the goodwill of the business and continuing to carry it on. By the terms of the dissolution the defendant was under a covenant not to compete with the old business within a limited area, but in 1914 it was found that he was committing breaches of the covenant and the plaintiff commenced an action. That action never came to trial, as when the statement of claim was delivered the defendant submitted to an injunction restraining him for a period of ten years from April 29, 1913, from carrying on business by himself, or in conjunction with others, as lift builder, engineer, or millwright within a radius of twenty miles from the Town Hall at Newcastle and for a like period within the same area, either by himself or by an agent, either personally or by letter, from competing or seeking to compete with the plaintiff in his business. The plaintiff continued to carry on business and the defendant had works at Middlesbrough. After the injunction was granted the plaintiff tendered for the installation of a lift at Horden, in Durham, which was within the prohibited area. The lift was for the Seaham Harbour Co-operative Society, which was a branch within the area of the Co-operative Wholesale Society, which was a company registered outside the area. The defendant, however, tendered for the lift through architects of Newcastle. This was undoubtedly a breach of the injunction, and the defence was that at the time the defendant tendered he thought that the place where the lift was to be installed was outside the radius. He (Mr. Sheldon) submitted that the fact that the tender was made to a firm of architects at Newcastle was in itself a breach of the injunction.

Mr. Hunt, for the defendant, admitted that the case in question was a breach of the injunction, but said that the defendant was invited to tender, and when he went to Horden he saw a sign-post which said "twenty-three miles to Newcastle," and he concluded that Horden was outside the radius. He accordingly sent in a tender, which was accepted. He received a letter from the plaintiff, who had also tendered, and he then discovered that Horden was just within the prohibited area. He at once wrote to the person to whom he had tendered saying that he was unable to

carry out the work and he also wrote apologising to the plaintiff. That would have ended the matter, but the plaintiff raised the contention that the defendant was not entitled to do work outside the prohibited area. The building owner was outside the prohibited area if the tender came through architects who were within the area. This he submitted was putting much too wide a construction on the injunction.

Mr. Sheldon contended that as the contracts usually came through architects, to accept a form of tender to architects within twenty miles of Newcastle was competing with the plaintiff in his business within the prohibited area.

His lordship said the case might prove to be a very important one, and he would reserve his judgment until the next Tuesday. He assured Mr. Hunt, however, that his client would not go to prison, whatever the decision might be.

His lordship, in giving judgment on Tuesday, said that to commit the defendant to prison for such an unwitting mistake was out of the question, and his lordship thought he certainly should be excused. There would be no order either on the motion or as to the costs.

APPRENTICESHIP IN THE BUILDING INDUSTRY.

We have received the following communication from Mr. Thos. Costigan, secretary of the Institute of Builders (Incorporated), Koh-i-Noor House, Kingsway, W.C.:

Some four or five years ago the Institute of Builders, the body officially representing the building trade of the kingdom, discussed and formulated a scheme of apprenticeship, and has since been doing its utmost to get the scheme adopted for London by the education authorities, but without success.

The scheme includes provisions which may be shortly stated.

Early in 1912 the Institute submitted to the London Education Authority a constructive scheme of apprenticeship that would enable suitable boys to learn a trade under proper conditions directly they leave the elementary school on the lines following:

(a) That the school age should be raised for such apprentices by two or even three years, so as to strengthen supervision and maintain, for part at least of the apprenticeship period, some connection between school and workshop.

(b) The indentures recommended by the Institute of Builders were for a period of five years in workshops and on jobs, so that a boy could learn his trade under actual working conditions.

(c) That time on two afternoons in each week at full pay should be given to the study of the theoretical side of the chosen trade during the first two or three years of the apprenticeship term, so that theory and practice should advance together.

(d) Where a premium is required with an apprentice, the Institute scheme would apply to the payment of such premiums a part of the money at present spent by the education authority in scholarships and similar rewards, sums now used mainly in subsidising non-industrial branches of higher education or in maintenance grants.

NOTE.—By this provision there would be no increase in the education rate.

(e) The connection between school and workshop, referred to in Clause (a), could

be maintained by a small voluntary advisory committee of managers and employers for each district or school division.

(f) The Institute scheme also included a schedule of premiums and rates of wages; these rates of pay are a very considerable advance on the wages until now being paid generally in the building or any other trade.

The weekly wages in this schedule starts at 8s. 4d. per week of fifty hours, and in the fifth year rises to 27s. 1d. per week (or 6½d. per hour), and while they do not and cannot compare with boy wages at present obtaining owing to war conditions, the parental sacrifice of present advantage for the ultimate good of the boy is surely not a heavy one.

(g) Where no premium is paid, the Institute's schedule of wages is rather less, so as to provide for payment of premium out of wages.

(h) A further part of the scheme is the provision of a bonus of £25 to the apprentice on completion of indentures, for the purchase of tools, etc.

These are the main points of the scheme which was first put before all the Borough Councils of London, and approved by twelve or thirteen of them, only one Council having returned a definite negative, and the rest making "no order."

The scheme has been carefully considered by educational experts, and is considered to contain the nucleus of a workable permissive scheme which would gather in the boys between fourteen and fifteen years of age and take them direct from the school to a trade, and thus prevent the wastage of good material drifting into "dead-end" jobs, having no ultimate benefit when the boy becomes a man, with a man's opportunities and responsibilities.

The scheme has been before the Higher Education Committee of the London County Council and has been explained in conference with the committee, but, while sympathetic, the committee held that they had no statutory power to adopt it.

The Institute has, therefore, this year decided to request the co-operation of the National Federation of Building Trades Employers of Great Britain and Ireland in arousing interest in and support of the scheme by the building trade throughout the country, with a view to Parliamentary action and the provision of the necessary permissive powers in the next Education Bill that must come before Parliament and the country when the war is happily ended.

GREAT DOCK DEVELOPMENTS IN LONDON.

In addition to the new deep-water dock near the Royal Albert Dock, vast improvements and extensions have been carried out by the Port of London Authority in the past year. East India Import Dock, of seventeen acres, has been modernised, and is now reached by a passage of 80 ft. wide and 31 ft. deep. Its north and east quays have been widened by 20 ft., and large new transit sheds have been built. Liners of 8,000 tons are now using the dock.

At the London Docks, the former narrow entrance to the western dock has been widened to 60 ft., and a reinforced-concrete jetty 800 ft. long by 196 ft. wide is in full use, with double-storey sheds of special

value for wool and sugar. By the impounding station the water is kept at 4½ ft. above Trinity high-water mark, which makes the dock more serviceable to the larger coasting and Continental vessels.

At Tilbury Docks for large liners one of the new sheds has an area of 78,000 sq. ft., and two others have an aggregate of 85,000 sq. ft. The riverside jetty, 1,000 ft. long by 50 ft. wide, is making good progress.

There is now temporary shedding to accommodate 50,000 bales of wool at the Victoria and Albert Docks. Other sheds at the West and South-West India Docks; one at Millwall with an area of 110,000 sq. ft., and new sheds at the Surrey Docks, 200,000 sq. ft., are nearly finished.

HOUSING HINTS FROM A MEDICAL OFFICER.

Three long reports dealing with sanitary conditions at Darlaston, Willenhall, and Tettenhall have been presented to the Staffordshire County Council. They had been prepared by Dr. G. Reid, the county medical officer, in compliance with the instructions of the Local Government Board. In each case Dr. Reid points out sanitary defects, but states that it cannot be expected that any work involving capital expenditure on the part of the local authorities, or serious outlay on the part of owners of property, can be undertaken at present; but the local authorities are to be asked what steps they propose to take to remedy the defects specified.

In regard to the question of overcrowding, Dr. Reid states that at Darlaston there did not appear to be any conspicuous overcrowding on space, but there were many cases of overcrowding in houses, especially from the point of view of adolescents and adults of both sexes occupying the same rooms.

While the Darlaston Urban Council have not formulated a scheme for the provision of artisans' dwellings, a private company, Dr. Reid says, has been active in this direction; but the arrangement of the houses does not meet with Dr. Reid's approval. He objects to the pantry being placed underneath the stairs, and he recommends that in any houses erected in future the Council should insist on the pantries being placed against an outer wall, so that light and air may be admitted to them. He also urges that the mistake of not providing a firegrate or other means of ventilation in one of the bedrooms shall not be continued.

Unsatisfactory conditions were found to exist in some of the slaughterhouses, and Dr. Reid asks that the District Council shall take steps to have the defects remedied, particularly the abolition of manure-pits near the buildings and the substitution of covered bins. Similar suggestions are made in regard to cowsheds, workshops, and bakehouses. In regard to the last-named, Dr. Reid mentions that in two instances pigs were kept on the premises, a practice which ought to be abolished.

[Reports by medical officers of health are usually studied with keen interest by architects, as such documents not only contain occasional hints for adoption in practice, but greatly strengthen the hands of the architect who may meet with opposition to proposed reforms.]

NEWS ITEMS.

Fibrous Plaster and Decorative Work.

Messrs. John Tanner and Son, 45, Horseferry Road, Westminster, have been entrusted with the fibrous plaster and decorative work of the reconstruction of the Palais de Luxe, Shaftesbury Avenue, the architect being Mr. F. Edward Jones.

Lieutenant S. Hall.

Lieutenant Samuel Hall, 8th Manchester Regiment, of Cleveleys Hydro, Cleveleys, Blackpool, Lancs, formerly of Didsbury and Withington, architect, who was killed in Gallipoli on June 4, has left property of the value of £22,700, with net personalty £2,885.

St. Paul's Church, Derby Lane, Liverpool.

With reference to the illustrated account of the above church in our issue of January 12, we are requested to add that the "silvery-grey" bricks used in the erection were specially made for Mr. G. Gilbert Scott by Mr. J. C. Edwards, of Ruabon.

Waterproofing Cement at the G.P.O., Dublin.

The value of waterproofed cement has for some time been recognised by most Government departments. We hear that the Board of Public Works have been making extensions to the G.P.O., Dublin, and that the powder Pudlo has been used for making some of the cement work watertight.

Standardised All-Steel Emergency Buildings.

In the illustrated article on this subject in last week's issue, p. 30, it was stated that the manufacturers of these remarkable buildings were The Trussed Concrete Steel Co. of America. To prevent misapprehension, it should be added that the London address of the firm is Central House, Kingsway, where all further information can be obtained from Mr. J. M. Lawrie.

On Active Service.

Second-Lieutenant A. R. Courtenay (late acting-manager of the Publication Department, General Electric Co., Ltd.) has now sailed for the Mediterranean. After about two months' active service in France with the Royal Naval Air Service, Armoured Car Aeroplane Support (Royal Naval Volunteer Reserve), he transferred to the Army Service Corps, and it is as a second-lieutenant in this corps that he is now seeing service.

Housing in Greenock.

Greenock Corporation have had a report prepared by a sub-committee dealing with the increase of working-class and middle-class rents in the burgh since the outbreak of the war, and with the question whether building operations are keeping pace with the demand for houses in and around the town. The committee declare that they are satisfied that building operations are not keeping pace with the demand. They state that there were 13,300 houses of £21 and under, an increase of fifty-six, at Whit-Sunday, 1915, compared with the previous year. In 111 properties in the burgh, representing about 800 tenants, the rents have been increased from 5 per cent. upwards. In certain properties there are rents showing increases of from 11.83 to 67.32 per cent. on pre-war rates.

LONDON DISTRICT SURVEYORS.

In order to fill temporarily vacancies for district surveyors, the Building Acts Committee of the London County Council have appointed Mr. S. F. Monier-Williams, district surveyor for the district of St. George, Hanover Square (Belgrave and Pimlico portion), to be interim district surveyor for the district of St. Pancras, South, and Mr. E. W. Lees, district surveyor for the district of St. Pancras, North, to be interim district surveyor for the district of Stoke Newington. Each of the appointments dates from December 1, 1915, and will continue during the pleasure of the Council. They have appointed Mr. C. W. Surrey, district surveyor for the district of City of London, West, to fill temporarily the vacancy caused by the death, on October 13, 1915, of Mr. E. R. Hewitt, district surveyor for the district of St. Saviour and St. George-the-Martyr (part), Southwark, and North Lambeth. The Committee have in this case, and also in the case of the vacancies mentioned above, appointed existing district surveyors temporarily to the positions, as they have thought it unwise to recommend the Council to appoint any new district surveyors during the war.

The Committee have extended for another year the period of office of the undermentioned district surveyors: Mr. F. Hammond (district of Hampstead), Mr. I. Lovegrove (district of Islington, South, and Shoreditch), and Mr. T. E. Mundy (district of Chelsea), and have re-appointed for another year Mr. J. Goodchild, interim district surveyor for the district of Islington, North, and Mr. A. W. Tanner, interim district surveyor for the district of St. George-in-the-East.

The Committee have consented, under section 142 of the London Building Act, 1894, to the appointment of deputy district surveyors in twelve cases, and have approved under section 141 of the London Building Act, 1894, the situation of district surveyors' offices in nine cases.

[In the general reorganisation that will occur when the war is over, no doubt the system of appointing district surveyors will be subjected to complete revision. No new system, however, can secure a more able body of men.]

REGULATIONS AS TO PORTABLE BUILDINGS.

So many people appear to be unaware of the regulations regarding the erection of portable wooden and similar buildings writes a contributor to the "Bazaar, Exchange and Mart" that a few notes on this subject may be of use to readers. Before ordering a building, be it only a wooden cycle shed, the district surveyor should be communicated with, as it is always necessary to obtain the consent of the local authorities, district council, etc., or in London the consent of the London County Council, for the erection of any building, portable or otherwise.

In the London district application must be made to the superintending architect, County Hall, Spring Gardens, the application being made in writing on paper of foolscap size on one side only of the paper. Drawings must be submitted (including plan, section, and elevation) made on the glazed side of tracing linen, or indelible prints of drawings on white linen may be submitted in lieu of tracings. All drawings must be in duplicate.

The drawings required are a block plan to a scale of at least 1 in. to 22 ft., indicat-

ing the situation of the building in relation to others adjacent, the frontage of the street on both sides of the site, the height of the proposed building, its precise distance from the centre of the roadway and the width of the street, and plans, sections, and elevations of the proposed structure or shed to a scale of 1 in. to 8 ft., showing clearly all details, the size of the timbers, etc. A fee of 5s. must be paid on deposit of the application, and in the event of it being approved a further fee of 5s. and an additional copy of the drawings may be required. In the case of portable buildings it is usual to get a licence for three years, and then to apply to the district surveyor for renewal.

TRADE AND CRAFT.

Fire-Resisting Wall Boards.

In view of the fact that wall boards are being widely adopted in place of lath and plaster for walls and ceilings, it is of interest to draw attention to a test recently carried out with "Fiberlic" root fibre board. The test was made by means of a blow-pipe with a 2-in. flame. The board was heated for three minutes under this intense flame, which would have soon burned through any ordinary board, yet the "Fiberlic" board was only just browned, thus proving in a very striking manner its highly fire-resisting qualities. These qualities are derived from the special chemical treatment adopted during the manufacture of the tough root fibres, and from the great density obtained by hydraulic pressure, which density moreover gives "Fiberlic" its sound-deadening qualities and makes it a non-conductor of heat and cold.

"Fiberlic" board is stated to be making great headway in this country, although it has only been on the British market a few months. It is supplied by Messrs. Macandrews and Forbes, Ltd., of 4, Finsbury Court, Finsbury Pavement, E.C.

SCOTTISH NATIONAL BUILDING CODE.

We have much pleasure in printing the following communication from Mr. Robert Gordon Wilson, jun., A.R.I.B.A., F.F.S., hon. sec. of the Aberdeen Society of Architects, to whose courtesy we are indebted also for a copy of the code, to which further attention will be given in a future issue:

Apropos the paragraph relative to a Scottish form of contract, at the bottom of page 25 in your issue for January 19, I send you a copy of same.

This agreement has been reached after about eighteen months of negotiation, and, as you will note on page 2, all the Scottish architectural bodies are signatories thereto, in addition to the Scottish National Building Trades Federation and several other trade organisations.

The regulations were printed by H.M. Stationery Office, but it is due to Sir George R. Askwith, K.C., Chief Industrial Commissioner's Department, who acted as chairman and final adjudicator, to acknowledge the skill and zeal with which he brought so delicate a document to so satisfactory a conclusion.

A mode of measurement of carpenter and joiner work has also been prepared and is now in use, while "Mason Work" is nearing completion, and one or two other trades have also been tackled.

It is hoped to have uniform modes for all the building trades prepared in course of time, so that Scotland still leads in progressive enterprise.

ARCHITECTURAL ASSOCIATION OF IRELAND.

"Belgium: Her Glory and Her Woe," was the subject of an interesting lecture, profusely illustrated with lantern slides, given by Mr. Harry Allberry, A.R.I.B.A., before the members of the Architectural Association in their rooms, 15, South Frederick Lane, Dublin.

In the course of his paper the lecturer dealt with the notable architectural examples, mediæval and modern, of the cities and larger towns which are at present in the hands of the Germans. Describing the devastating march of the invaders from Liège, through Brussels, to Antwerp, and the noble buildings, and the havoc wrought to them in Louvain, Ghent, Bruges, Malines, Courtrai, and Dinant, until the advance of the enemy was stopped by the artillery of the Belgian, French, and British armies in and around Ypres, the lecturer recounted the history of most of the famous ecclesiastical and civil buildings in the country, and the destruction they had suffered from the guns of the Germans. Many of the lantern slides shown by the lecturer, admirable for their clearness and sharpness of outline, afforded pathetic evidence of the destruction done to Belgium's most celebrated and historical monuments of architecture.

A PLEA FOR BETTER WAR MEMORIALS.

In an article in "The Times" of Monday last, it is recalled that a new society, called the Civic Arts Association, has lately been formed, which will hold its inaugural meeting at the Mansion House on the 28th of this month at 3 o'clock. Its aim is to improve all those arts by which towns and villages might be made beautiful, but by which, at present, they are more often made ugly, and it proposes to give particular attention to war memorials, both private and public, and to hold an exhibition as soon as possible of designs for them.

It is, indeed (the writer of "The Times" article continues), most important that we should not fail in our war memorials, which are sure to be many and diverse; and we shall certainly fail in them unless we learn to express our real feelings through them. A memorial is something meant to keep alive the memory of a great event, or of some person loved or admired. In it one generation speaks to future generations, and it cannot wish that its language should be ugly or absurd or meaningless. But we, and all the peoples of modern Europe, have shown less power of expressing ourselves thus to future generations than any age in the past. We have only to think of our Jubilee memorials to know that this is so; and we do not wish to repeat that failure. But how are we to avoid it? Artists tell us that we are to consult artists. There at once the difficulty arises that there are artists and artists, and most public bodies, as well as many private persons, do not know which artists are artists. The best they can do, in their ignorance, is to employ some one commonly supposed to be an artist who will provide them with something which, he will tell them, is art, and which they will submit to, as being art, though they may not like it. That is the manner in which Jubilee memorials were provided; and we want something better now.

PUBLISHER'S ANNOUNCEMENT.

THE question of the cost of Advertising is governed entirely by the circulation of a publication. The prices for small Advertisements enumerated below are framed upon the lowest possible basis in order to allow the use of the columns of the Journal for "Wants," &c., at a figure well within the reach of everyone.

Advertisers are purchasing the circulation of a paper in buying space for their announcements, and we are able to announce that "The Weekly Nett Sale of The Architects' and Builders' Journal is larger than that of any other Architectural Journal."

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ASSISTANCE rendered to builders and decorators by a life experienced Estimator; variations, accounts; salary or terms; not eligible.—S., 12, Cressida Road, Upper Holloway, N.

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FOREMAN of Painters and Decorators; all kinds of decorations; good manager of men; high-class references; London or provinces.—Decorator, 22, Little St. Andrew Street, St. Martin's Lane, London, W.C.

FOREMAN or Overseer seeks berth; thoroughly competent; above military age; life experience in all branches of the building trades; good manager of men; free at once.—Box 692.

GENERAL Foreman disengaged; age 49; carried out jobs in London and country; good references; 17 years one large firm; life abstainer; carpenter by trade; town or country.—H. J. B., 10, Carlton Road, New Southgate. 736

GENERAL or Working Foreman (carpenter); thoroughly competent; long experience; new and alterations; references good.—Foreman, Lyncroft House, Lyncroft Gardens, West Hampstead, N.W.

GENERAL Foreman seeks re-engagement; town or country; new or alterations; carpenter by trade; just finished hutments; good references.—C. H., 6, Marshall's Road, Sutton, Surrey.

GENERAL Foreman seeks re-engagement; just finishing four Government jobs; twelve years' experience; new, alterations, camps; highest references for ability and quick work.—C., 8, Hestercombe Avenue, Fulham, S.W. 724

GENERAL Foreman requires work; used to new and alteration jobs; good references; aged 50; trade, carpenter; wages moderate.—Riches, 115, Burges Road, East Ham, E.

LONDON Estate Surveyor (43) seeks appointment or temporary work on plans surveys, dilapidations, valuations, assessments, sanitary surveys and reports, and general management of house property.—C., 24, Alexandra Road, Hemel Hempstead.

MANAGER of Works seeks re-engagement for the erection of fireproof buildings; photographs showing complete buildings erected on the 3 in. external wall system; sanatoria, hospitals, military quarters, halls, hangarows, etc; fireproof floors and partitions.—Box 729.

THE Association of Builders' Foremen and Clerk of Works, 56, Old Bailey, E.C.—Experienced Foremen and Clerks of Works can be obtained by applying to the Secretary, Mr. J. W. Sawyer, 214, Clapham Road, S.W. Competent foremen and clerks of works are invited to join this Association.

WANTED (Labour only) Brickwork, Pointing, Dilapidations, Roof Repairs, Drains, etc.; old or new work, by rod, or job; large or small jobs; any distance; good references.—Apply J. Watson, 17, Gascony-avenue, Kilburn, N.W. 727

Appointments Vacant.

6d. per line.

ARCHITECTS' WAR COMMITTEE.

The Professional Employment Committee have under consideration certain schemes of work with a view to affording small temporary employment to architects who are without work in consequence of the war. Applications can only be considered from British architects dependent on their profession for a living, whose present difficulties are directly due to the war, and who are not eligible for military service. Applications should, in the first instance be made to the Hon. Secretary of the Professional Employment Committee of the Architects' War Committee, 28, Bedford Square, W.C.

PRIME Cost Clerk for builder's office wanted at once.—Apply by letter, stating full particulars and salary required, to W. H. Gaze and Sons, Limited, Bridge Street, Walton-on-Thames. 732

Miscellaneous.

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FOR SALE. Lombardic Architecture, by G. T. Rivoira, two handsome royal 4to volumes, 800 illustrations; quite new; published £3 3s., at 30s.—Box 730.

TYPEWRITING; architects' and builders' specifications, quantities, reports, etc.; testimonials copied; prompt, cheap, and accurate; send for price list.—Address, "Typist," Typewriting Office, 65, Marsham Street, Westminster. 737

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BOOKS.—Books on Building Trades, Engineering Educational, Literary, Technical, and all other subjects; second-hand at half prices; new at 25 per cent. discount; catalogue free; state wants; books sent on approval; books bought; best prices given.—W. and G. Foyle, 121-122, Charing Cross Road, London, W.C.

WANTED to purchase. Early editions of Vitruvius on Architecture; send details as to date, binding, etc.—Box 731.

Contracts Open.

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SOUTHWARK UNION, LONDON.

TO CONTRACTORS.

The Guardians of the Poor of the Southwark Union are desirous of receiving **TENDERS for ALTERATIONS, SANITARY FITTINGS, and OTHER WORKS at the SOUTHWARK MILITARY HOSPITAL, Dulwich Grove, Dulwich, S.E.** Persons desiring to Tender may obtain the specification, general conditions of Contract, and form of Tender **ANY DAY** from January 21st to 25th (both days inclusive), between the hours of **TEN a.m.** and **FOUR p.m.** (Saturday until Noon), upon application to the Guardians' Architect, Mr. A. SAXON SNELL, F.R.I.B.A., of No. 9, Bentinck Street, Manchester Square, W., and depositing with him a £5 Bank of England note, which will be returned to persons sending a bona-fide Tender in the manner and at the time stipulated.

Tenders must be signed, sealed, and delivered to me, the undersigned, at the **GUARDIANS' OFFICES, 110, Strand, Blackfriars Road, S.E.**, on or before **NOON on MONDAY, JANUARY 31st, 1916**, in the special envelope supplied by the ARCHITECT.

The Guardians do not bind themselves to accept the lowest or any Tender.

Trade union conditions must be observed.

(By Order)

SYDNEY WOOD,

Clerk to the Board.

Guardians' Offices.

110, Strand, Blackfriars, S.E.

January 18th, 1916.

Contracts Open—Continued.

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TO BUILDERS AND CONTRACTORS.

The Gas Committee are prepared to receive **TENDERS for the Work and Materials required for the Erection of a Power-house at their Bradford Road Station.**

Specification, bill of quantities, and form of tender may be obtained on application to Mr. Fredk. A. Price, Superintendent, Gas Department, Town Hall, Manchester, on payment of one guinea, which will be returned on receipt of a bona-fide tender.

Drawings may be seen, the site inspected, and any other information obtained on application to the Engineer, Mr. J. G. Newbigging, M.Inst.C.E., at his office, Rochdale Road Gasworks.

Sealed tenders, addressed to the Chairman of the Gas Committee, and endorsed, "Tender for Power house, Bradford Road Station," must be delivered at the Gas Offices, Town Hall, Manchester, not later than 10 a.m. on Thursday, February 10th, 1916.

The Committee do not bind themselves to accept the lowest or any tender.

By order, **THOMAS HUDSON.**

Town Clerk.

Town Hall, Manchester.

January 17th, 1916.

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THE ARCHITECTS' & BUILDERS' JOURNAL.

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EDITORIAL.

THERE is poetry in everything, and reinforced concrete is not safe from this generalisation. A Fellow of the Institute of Surveyors has made this far-reaching discovery. "In view of the mass of literature describing the various systems," he says, "and of the theories and bewildering formulæ connected with stresses and strains, the subject appears to be particularly dry; but a keen interest in it may be aroused if we exercise our reflective faculties in attempting to realise all that a reinforced concrete structure represents. For instance, if we pause to inquire into the origin and supply of our building materials, there is unfolded to us the enthralling epic of the soil; from which we learn that our ballast and sand (the water-worn fragments of pre-existing rocks), the mineral products from which the steel rods are made, the chalk and clay for our cement, all come to us from a far-distant past in obedience to the marvellous law of nature. We learn that our solar system itself. . ."

* * * *

Into these higher flights we dare not follow him, but we almost wish he had expressed in deathless verse his dithyrambs about reinforced concrete, even as Mr. H. G. Wells's poet celebrated in a "Ballade of the Bedroom Suite" his unwilling visit to a furniture "Emporium"—"Noble the oak you are now displaying, Subtly the hazel's grainings go, Walnut's charm there is no gainsaying, Red as wine is your rosewood's glow, Brave and brilliant the ash you show, Rich your mahogany's hepatite shine, Cool and sweet your enamel: But oh! Where are the Wardrobes of Painted Pine?" Quite a happy combination of poetry and practicality! Mr. Wells, of course, is poking fun at us; but the F.S.I. was apparently as serious as an Extension lecturer. In either or any case, as Ruskin and Morris well knew, detection and exaggeration of the romance residing in commonplace things is a useful corrective of the opposite extreme. Setting off the extravagantly romantic against the mean and sordid view, we may arrive at something like the correct poise or attitude towards work that must be interesting to us if we are to do it well. For the average temperament, however, mere glamour is superfluous; the intrinsic interest of reinforced-concrete design and construction, for instance, is sufficiently strong to create something that is hardly distinguishable from enthusiasm in those who address themselves earnestly to the better solution of the many problems involved.

* * * *

To the bad housing conditions of Berlin we have repeatedly drawn attention. In the eyes of the visitor broad streets and imposing frontages may disguise effectually the festering slums that are rapidly sapping the health of the citizens, but the

German Association of School Physicians do not share this illusion. They report that large numbers of children have to be sent from school because of diseases and general weakness of constitution, the majority being in urgent need of medical attention. Poverty and bad housing are the potent causes. "In Berlin, especially," it is stated in a German report of the conference of the above-named Association, "the workers and the middle class live in houses where neither light nor air can penetrate. Five or six people live in a single room, and often sleep in a single bed." As we have previously shown, slum-landlordism is rampant in Germany, and the sheep-like people are powerless against it. Obviously, in their lust for world-power, the Germans begin at the wrong end. In a German novel—"The Buchholz Family"—that had considerable vogue in English-speaking countries a few years back, there is a young doctor who seldom comes on the scene without using his catchword, "It is merely external." Germany's might and majesty, and the grandiosity of her spacious streets, are "merely external." Within all is rotteness. For us, this is no argument against spacious streets, although it is certainly a very strong encouragement to persevere with an uncompromising policy of healthy and seemly housing.

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France is mobilising for the commercial and economic war which is to succeed the lethal conflict now raging. An attempt is being made to form a general federation of all the merchants and contractors in France, and of all the chambers of commerce and industrial corporations capable of helping the Government to organise the importation of the goods necessary for giving a fresh start to French industrial life. Our building trade contemporary "Le Batiment" has assumed a leading part in this effort, and an architect, M. Louis Jardin, is contributing to its columns a series of articles in furtherance of the project—"campaign" he calls it. State aid is to be sought; for the State can reduce transport and import duties, and, acting through the Banque de France and the Crédit Foncier, can facilitate foreign credit. Moreover, "the State can make easy the acquisition of entire forests, and of certain special products, can furnish us with the means of conveyance by sea or land, can smooth away all kinds of difficulties, can furnish or procure an inventory of the country's needs and resources, and can lend the movement invaluable moral support." M. Jardin briefly classifies the imports that will be immediately required. These comprise (1) Materials for rendering existing railways efficient and for constructing new lines; (2) materials for reconstructing ruined areas; and (3) machinery, power installa-

tions, and everything necessary for the equipment of factories and workshops. He hints at the necessity for establishing a standardised system of nomenclature for goods and processes and he advises traders to form a careful estimate of the goods they are likely to require, with a statement of the financial resources they can command, and of the credit they will need. These are what M. Jardin conceives to be the preliminary steps in what he calls "the economic war of to-morrow," and of what another writer in the same paper terms "the second part of the European War." Their relevancy to our own case we have almost incessantly expounded. We should have done this as a patriotic duty, even if the business and professional interests of the building industry had not been so directly involved as obviously they are.

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An article on "War Memorials" that recently appeared in "The Times" explains what was clear, obscures what was dark, and withal drops here and there a word of wisdom. "A memorial," it tells us, "is something meant to keep alive the memory of a great event, or of some person loved or admired." "*Connu!*" as Mr. Andrew Lang would have gleefully exclaimed. "Our memorials should take the form of something that we ourselves like, not of something which we suppose we should like if we were artists." From this mystically metaphysical proposition it is difficult to extract much nutriment. An artist might justly retort in exactly the same terms, but substituting "Philistines" for artists. Consciously or unconsciously, an artist produces, generally speaking, not what he likes himself, but what he thinks the *bourgeoisie* will like. In many cases, no doubt, he misinterprets them as completely as they would misinterpret him if he worked to please himself; and the upshot is that he is the most successful artist (commercially speaking) who has the greatest knack of interpreting the untrained mind, and hence of producing the acceptable compromise. "No compromise, no client," is a motto that has destroyed much art, as many an architect could attest. How many architects are allowed a free hand in design? In this respect the architect is in a much worse position than the painter or the sculptor, because the architect's client is so much more intimately interested in and related to the product: "I've got to live in it, you know," is the clinching of the argument, and the architect has to do not what he would, but what he can, his concessions to ignorance and vulgarity costing him unhappy days and sleepless nights.

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Then "The Times" writer goes on to say, "The artist's business is to make what we like as well as he can, not to provide us with something we do not like, but which he professes to like because he has made it. This submission of ours to the artist has produced a race of tradesmen who make objects which no human being possibly could like, but which are endured because they are supposed to be art." This would be rather felicitous with respect to boots and bonnets: familiarity with examples, and frequency of requirement, giving us a tolerably clear idea of what we want, where to obtain it, and courage to see that we get it without overmuch submission to the "artist." But it seems to belittle the artist's creative faculty, and by saddling him with the "business" of conforming to his customer's commands, qualifies him to join the "race of tradesmen" who profess to like objects which no human being possibly could like—the hypocrites! It is really very difficult to see what the writer would be at; but if he means that the public—or, rather, that comparatively small section of it which has a controlling influence in such matters, and of whom quite obviously he is not a typical example—ought to be less hazy as to its requirements, and more competent to express them, he has our suffrages, providing

he admits that the public ought also to have sufficient intelligence to recognise that the artist, *quâ* artist, has vision as well as executive ability, which is where, generally, he differs from the bootmaker or bonnet-builder, to whose level "The Times" writer would seem desirous of reducing him, while still demanding that he shall also be an artist. But we could forgive the writer all his fallacies and half his metaphysics for the sake of this sane and sweet and wholly winsome sentence: "Whatever the memorial may be, it should not be an advertisement, but something said simply and quietly, like a whisper of grief and love." We put that last, because it disarms criticism. By the way, it may be usefully recalled that Professor Adshead is delivering, at University College, Gower Street, a series of six lectures on War Memorials, and that this prolific and topical subject is being very thoroughly illustrated in the "Architectural Review."

* * * *

At the annual general meeting of the National Federation of Building Trades Employers, of which a report appears in the present issue, the most important subject under discussion was that of pre-war contracts. Introducing the matter in a remarkably able and vigorous speech, Mr. Ernest J. Brown, a former president, urged that the Federation should make strong representations to the Government with regard to the heavy losses sustained by builders who are compelled to carry out, under war conditions, and in some cases at absolutely ruinous loss, contracts that were undertaken when labour was plentiful, prices were much lower, and transport and delivery were much less difficult. He reminded his hearers of virtual admissions by the Government that firms who through no fault of their own were suffering for the general good had a fair case for compensation out of the public purse; and he may be said to have killed with both barrels when he remarked that the Government, by themselves paying extra war bonuses to meet the increased cost of labour, had qualified for a sympathetic understanding of the situation. Also, as another speaker adroitly observed, the Government's recent more intimate acquaintance with the idiosyncrasies of labour should have a salutary educative effect with regard to the difficulties with which civil employers are forced to contend.

* * * *

Mr. Brown's resolution was supported by very striking testimony adduced by other members with respect to the hardships and losses suffered by large numbers of contractors. It seemed certain to be carried unanimously, but the strange itch for amendments intervened, and a clause restricting the proposal to public contracts was carried. On the amendment being put as a substantive motion, however, this self-denying restriction was removed—wisely, we think; but it would surely have been better to let the motion stand in its original terms, which did not differ materially from those of the resolution ultimately adopted. One is at a loss to understand why a representative body of builders should be solicitous to exempt private owners from the privilege of paying for what they get, or to fortify them in their determination to exact fulfilment to the letter of pre-war contracts or agreements that can only be carried out at heavy loss to one of the parties. As the other party gets his building relatively cheap, the least he could do in fairness would be to share the advantage. A general disposition to meet the builder half-way might have justified the exclusion of the private owner from the case; but the contrary experience being the more common, any measure of relief that the Federation may succeed in obtaining from the Government ought surely to apply to private as well as to public contracts, otherwise the majority of builders will be left outside its too narrow scope.

HERE AND THERE.

NOT so much as a postcard having reached me from "A Constant Reader," I will lose no time in correcting myself about the "Star and Garter" at Richmond. Last week, in some hurriedly written notes, I made a bad slip, though there is perhaps some little exoneration for me in the perplexing contemporary accounts which I have since unearthed. The original little wayside inn which grew into the "first-class hotel" of the early nineteenth century—the original "Star and Garter"—was destroyed by fire on January 12, 1870, but six years previously the limited liability company who acquired the property had built, as an extension, the great block commonly known as the "Star and Garter Hotel," which escaped the fire. This is the building which has just been pulled down. Its architect was not C. J. Phipps, but E. M. Barry. Phipps did not appear on the scene until 1872, when he built the palatial annexe on the site of the original "Star and Garter," joining his own work to Barry's by means of an octagonal vestibule. In connection with Phipps's building it is interesting to note that most of the contractors who were engaged on the work are still flourishing. The foundation work was carried out by Drake's Concrete Company, a firm which, I believe, does not at present exist, nor am I familiar with the name of the general contractors, Newman and Mann, but all the following names will be well known to readers:—Sanitary fittings and plumbing, Geo. Jennings; carton-pierre work, George Jackson and Sons; gas installation, Strode and Co.; engineering work and kitchen fittings, Jeakes and Co.; girders, Archibald Dawnay; zinc roofing, Braby and Co. This, be it remembered, refers to more than forty years ago, a very striking illustration of the continued stability of leading firms in the building trade.

* * * *

Reference to the "Star and Garter" leads me to say a word or two about some of Richmond's other notable houses. The town holds a great remnant of Georgian work, both early and late, and although modern alterations have in some cases largely interfered with the original aspect of the houses, the old character is largely preserved intact, the windows with their crown glass and thin or thick bars, the doorways with their carved hoods and porches, and, within, an abundance of panelling and other decorative woodwork. Close to the "Star and Garter" is the house, "Wick House," which was built for Sir Joshua Reynolds about 1769 from designs by Sir William Chambers. The great artist, however, did not reside here much, although from the drawing-room window he painted one of the only three landscapes that can be ascribed to him. Judging from the outside, one would never suppose Chambers to have had a hand in this design. As a matter of fact, the house was wholly altered in 1840, when a stucco casing of nondescript Victorian character was applied over the old brickwork. A far more interesting house is "The Wick," next to it. An illustration of this delightful little building was given in the issue of this Journal for March 18, 1914. I have never seen the authorship of it definitely ascribed, but it looks very much like the work of James Paine, who built Richmond Bridge in 1774-77; and the assumption that James Paine was the architect is strengthened by the established fact that "The Wick" occupies the site of an old inn, "The Bull's Head," which was pulled down in 1775. Then there are houses facing the celebrated Terrace, most of them with literary and other associations—such as Downe House, where Sheridan lived—and some of them of much architectural interest, including a fine Palladian house which looks like the work of Isaac Ware or Sir Robert Taylor; and on the way down

the Hill, and around the Green, are some scores of Georgian houses which recall the days when Richmond was a quiet little place far from the turmoil of London.

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Perhaps the most suggestive piece of brickwork in the town is the fragment of the old Palace and its gateway, which seems to have been the entrance to the wardrobe court. It is said that Edward the Confessor built a palace at Richmond, but fire and time utterly destroyed that building, and also the several succeeding Royal houses which occupied the site; so that this gateway and the little building within alone remain as a relic of the palace which Henry the Seventh built—"that magnificent mansion where Henry the Eighth had entertained right royally Imperial guests; where Queen Elizabeth had loved to retire her dignity from the pressure of affairs of State; the residence Prince Henry had adorned with the taste of a Francis and the splendour of a Medici; whose corridors had been familiar with the dignity of Wolsey, the wisdom of Burleigh, the gallantry of Essex, Sydney, and Raleigh; and whose presence-chamber had been illuminated by the beauties of a dozen successive generations." The palace grew sadly dilapidated under Cromwell, and eventually, after a life of vicissitude (Styve in 1720 speaks of it as "now decayed and parcelled out in tenements"), fell into utter ruin. The gatehouse faces the Green—that delightful feature of old-time England—whereon tournaments, jousts, lists, games, and other festivities took place, and where, in later days, the eighteenth-century ladies and gentlemen were wont to parade. The little building has been repaired within recent years, and some attention given to its bay window. The story goes that in the room to which this window belongs Queen Elizabeth died—of smallpox, as is well known, but this is very unlikely; much more probable is it that her death took place in another and larger part of the palace.

UBIQUE.

THE PLATES.

Boatmen's Bank Building, St. Louis.

THIS is a representative example of a modern office building in America. It is erected on caissons sunk to bed-rock, about 50 ft. below street level, these caissons supporting a heavy steel-and-concrete grillage, on which the steel columns are set. The building is of steel-frame construction, fireproofed with tile and cement, the floors being of reinforced concrete beams with tile fillers between. The pilasters and base are of granite, the Corinthian capitals and other architectural enrichments being of semi-glazed terra-cotta. The column shafts from the fourth to the sixteenth storey are of bluish-grey brick. Messrs. Eames and Young were the architects.

Detail of the Sorbonne, Paris.

M. Nénot has displayed masterly ability in the Sorbonne. The façade is noteworthy in many respects, but especially for its treatment of applied columns, with windows between. This treatment is rarely successful, but here it is carried out to perfection. The break of the cornice into the curved pediment is similarly accomplished with rare skill and success.

Carved Panel in the Petit Trianon, Versailles.

The Petit Trianon was built by Gabriel, most accomplished of all French architects, and the details of its embellishment exhibit the same purity as the general architectural design. The carved panel which we illustrate is a superb example of craftsmanship in wood.

Porch to Brown House, Reigate.

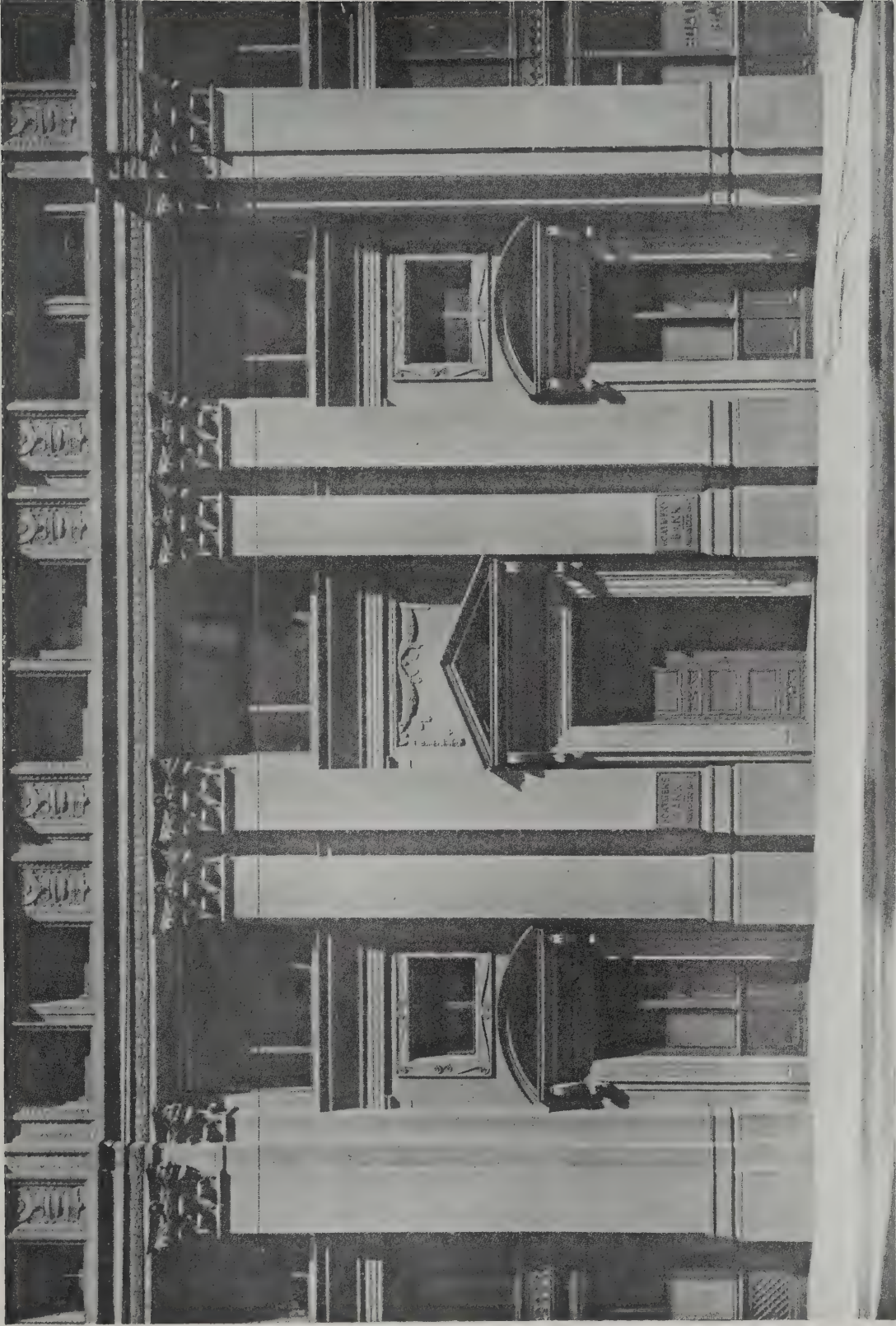
It would, we think, be difficult to find a more delightful example of a Late Georgian porch than this one.



MODERN AMERICAN ARCHITECTURE. XXX.—BOATMEN'S BANK BUILDING, ST. LOUIS.

EAMES AND YOUNG, ARCHITECTS.

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MODERN AMERICAN ARCHITECTURE. XXVI. - BOATMEN'S BANK BUILDING, ST. LOUIS: DETAIL OF LOWER STOREYS.
EAMES AND YOUNG, ARCHITECTS.

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MODERN AMERICAN ARCHITECTURE. XXXII.—BOATMEN'S BANK BUILDING, ST. LOUIS: BANKING HALL.
EAMES AND YOUNG, ARCHITECTS.



MONUMENTAL ARCHITECTURE. XLIII. — THE SORBONNE, PARIS: DETAIL OF FAÇADE,
NÉNOT, ARCHITECT.

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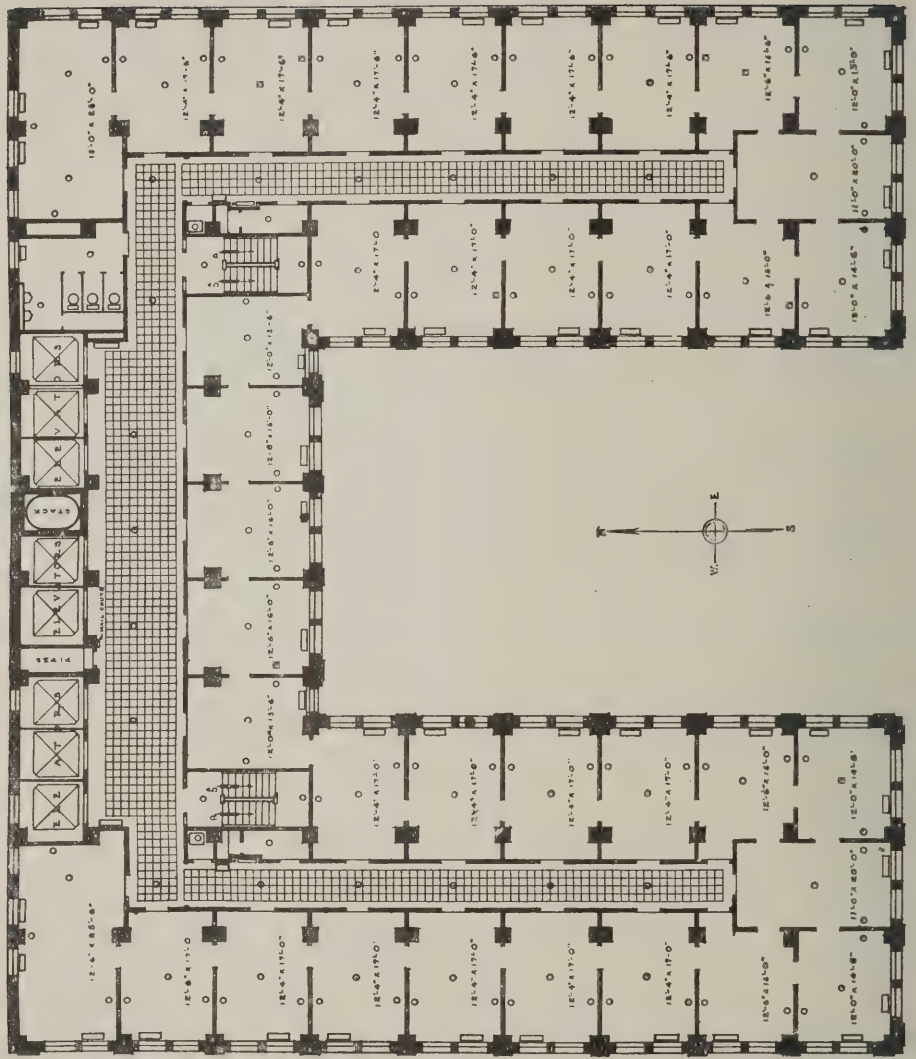
DETAILS OF CRAFTSMANSHIP. XLIX.—CARVED WOOD PANEL IN THE PETIT TRIANON, VERSAILLES.



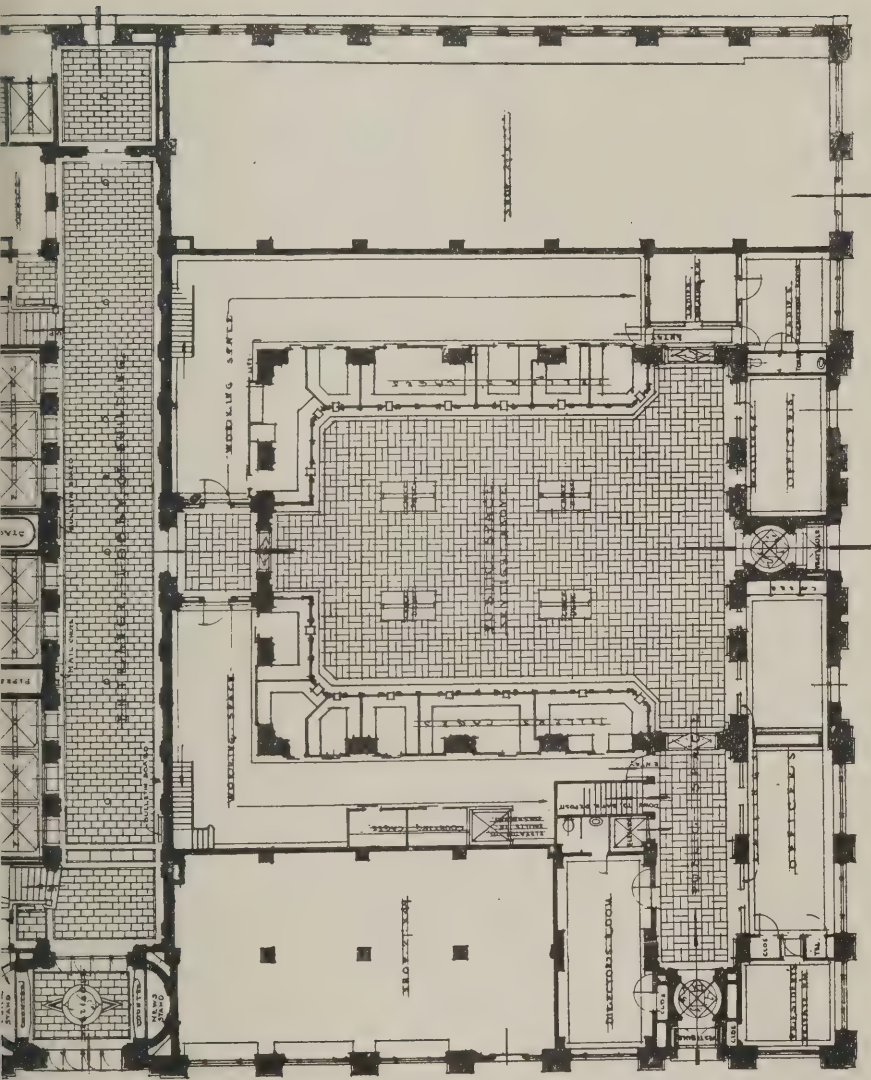
SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.). XX.—BROWN HOUSE, REIGATE: PORCH.

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Typical Floor Plan.



Ground-floor Plan.

MODERN AMERICAN ARCHITECTURE. XXXIII.—BOATMEN'S BANK BUILDING, ST. LOUIS,
EAMES AND YOUNG, ARCHITECTS.

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ANNUAL MEETING OF THE NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS.

[SPECIAL REPORT.]

MR. A. W. SINCLAIR (president) took the chair on Wednesday at the Holborn Restaurant at the annual meeting of the National Federation of Building Trades Employers of Great Britain and Ireland, when there was a large attendance of members.

The Annual Report.

Mr. A. G. White (secretary) submitted the annual report of the officers and council, which dealt with a variety of matters. It was stated that the total number of local associations affiliated was upwards of 182, with an aggregate membership of about 6,700. In the paragraph dealing with the state of trade, a revival of building on a big scale was anticipated at no distant date. Warning was given of a shortage of labour when the revival took place, and the associations and members were urged to give the question of apprenticeship training their serious attention. There were no fresh developments with regard to the subject of forms of contract and sub-contract except that negotiations for a form of sub-contract for use with sub-contractors employed directly by the sole contractors had been resumed. The present circumstances had checked somewhat the flow of articles of special interest to the building trade, but the technical papers were making every effort to elucidate such questions as presented themselves. In this connection attention was called to a series of articles by Belgian experts which have appeared in THE ARCHITECTS' AND BUILDERS' JOURNAL dealing with the problems which will arise in connection with the restoration of Belgium. The articles were of a practical kind, and treated the questions of finance, credit, goods and plant, and the competition of German traders in a manner both masterly and illuminating. The articles had since been republished in pamphlet form, and should be in the hands of any English firm desirous of doing business with Belgium. At the end of the year the amount subscribed to the Belgian Builders' Relief Fund was £1,948 16s. 8d. In regard to the question of apprenticeship, the sub-committee appointed to deal further with it was considering the proposals which had been drawn up by the Institute of Builders. Complaint was being made as to the lack of equitable consideration shown to contractors by certain of their clients now that contracts taken prior to the war were finishing, and the Council held that it was only a reasonable expectation on the part of contractors that the Government would see that their case was given the same equitable and effective consideration that had been given to other equitable claims. With reference to damage to roads by heavy motors, the Federation had placed a statement before the Departmental Committee considering the matter asking for an amendment of the Highways and Locomotives Acts so as to bring a contractor's other transport vehicles into a parallel position to that of his heavy motor vehicles, so as to remove the present uncertainty as to his liability. Other matters touched on included relations with the operatives, organisation, reserved occupations, Munitions of War Amendment Act, the apprenticeship question, boards of conciliation, etc.

The President Moves the Adoption of the Report.

The President, in moving the adoption of the report, said that whilst there had been restrictions of their proceedings during the year it had not affected the practical working of the Federation. Their boards of conciliation were doing splendid work, and were extending the scope of their activities, and it was being generally recognised by employers, and also by the operatives, that if no other work had been accomplished by the Federation they had done splendidly by establishing these boards of conciliation. With regard to the forms of contract, they had met the Practice Committee of the Royal Institute of British Architects, and it might be possible to arrange an agreement which might be satisfactory to all parties. For a moment there was a little complication, as Lancashire, finding conditions which pressed very heavily upon them, had got out a new contract agreement. They did not want to put forward a sectional agreement, and they hoped to be able to join it up in one agreement for the whole of the country. In regard to the sub-contract matter, sub-contractors had for years been asking that they might have greater security in regard to their arrangements for finance, and it was perfectly fair that the men who did the work should have security for receiving payment. They found, however, in their interviews with the Royal Institute of British Architects, that the architects were not prepared to recognise any sub-contract, as they said their obligations under the present form of national contract were great enough. They did discover, however, that if it was possible for the builders and sub-contractors to devise a form of contract that would not add to the obligations of architects they would be inclined to consider it favourably. It was hoped before long to submit a form of sub-contract to the R.I.B.A. The President touched on the subjects of pre-war contracts and apprenticeship, and in regard to the question of the damage of roads by heavy motors, pointed out that the law was in a very unsatisfactory state. Neither the local authorities nor the builders were satisfied with the law, and there were cases where as much as 10 per cent. of the whole contract had had to be paid for road damage. When a builder was tendering for a contract it was only reasonable that he should have some idea of what the use of the roads was going to cost him, and they were endeavouring to secure an alteration of the law so that the contractor might know where he was.

Employers' Parliamentary Council.

Mr. W. Shepherd (London) seconded the motion, and also introduced the report of the Employers' Parliamentary Council. He explained that their attitude in regard to Parliamentary matters had been one of watching. It was interesting, however, to notice that the difficulties enforced on builders by class legislation passed in recent years had now had to be faced by the Government in their dealings with industries in consequence of the war, and it might be expected that when the war was over an acquaintance with these difficulties would make the Government more sympathetic to the troubles of employers.

Mr. Foster (Burnley) complained that the Employers' Parliamentary Council had done little, and contended that now was the time for them to consider a policy so that they might hereafter deal with labour troubles.

Replying to Mr. Moffatt (Birmingham), the President said the Federation had endeavoured to get men indispensable to contractors placed on the reserved lists, but had not been in any degree successful.

The report was adopted.

On the motion of Mr. H. Willcock, seconded by Mr. S. Easten, the financial statement was adopted.

Assistance to Belgians.

Mr. W. Thomas (Cardiff) explained that he and Mr. Easten had waited on Mr. Holloway, the Director of the Building Department at the Ministry of Munitions, with reference to the employment of Belgian contractors now in this country, and Mr. Easten had made an offer which it was hoped would be of great assistance.

Mr. Easten said that Mr. Holloway told them that the Department had considered the basis for the erection of houses for the accommodation of munition workers. He might say that he had tendered for some of these houses on the Tyne, but his tender was 20 per cent. above the basis laid down by Mr. Holloway. He, however, offered to take on the building of 100 houses and to engage as many Belgian builders on the work as cared to come. If their cost was going to be much in excess of his own he would certainly stop them and finish the work with his own men, but he would give them every opportunity. If there was any profit accruing from the Belgian workers, he was prepared to give half of it to the Belgian Fund. If there was any loss he would bear it and would pay the men fair remuneration for the work they were doing. He also saw Mr. Hunter, who directed steel construction, and he had received an introduction to the manager on the Tyneside and hoped they might get a certain number of Belgian contractors employed in steel construction work.

The President moved, "That a further appeal on behalf of the Fund be made to the branches which have not so far responded to the resolution of the Council to do so, to be accompanied by an explanatory account of what has been done and what is necessary." The President explained that they had only sufficient funds to carry on their work of assistance to the end of February, and he strongly urged that they should do what they could.

The motion was carried and

Mr. Volckerick, of Antwerp, warmly thanked the meeting on behalf of his compatriots.

Subscription.

It was decided that the subscription for the year should remain the same as before.

Pre-War Contracts.

Mr. E. J. Brown (London) said if they were to do anything in regard to pre-war contracts they must do it in a whole-hearted way. He had been asked by his (the London Master Builders') Association to bring the matter before the meeting, and to express the hope that the Federation would take it up and do what was possible as soon as possible with the Government in order to try and obtain some redress

for the unfortunate contractor who had made pre-war contracts. He held in his hands twenty-five cases of hardship arising in London alone, so it was quite evident that there must be a very large number of their members who had been very hard hit. Some of the cases ran into thousands of pounds, and no redress seemed likely to be made to the contractor, who entered into these contracts never dreaming there was going to be a war within perhaps a month of his signing the contract. The employers who would get the work done apparently did not intend to pay anything towards the increased cost to which the contractor had been put. Speaking in May of last year, the Prime Minister, at Newcastle, said that the taxpayer should compensate firms who through no fault of their own had to suffer for the general good. He presumed that Mr. Asquith would adhere to his words, and it meant that the employer of labour, the contractor who lost through the war through no fault of his own, would be compensated by the taxpayer. In the House of Commons, on November 25, Mr. Touche brought up a case in the City of London where the ground landlord refused a request by a contractor to suspend building operations during the war, and the Chancellor of the Exchequer said the matter did not come within his Department. Later, in December, the Prime Minister was asked if legislation would be brought forward to relieve such cases, and he said the case brought forward was under the consideration of the Government, but he was not in a position to express an opinion as to legislation. He was willing to receive representations on the subject. The situation was considered by the London Association, and they felt it was a matter which must be taken up by a powerful body like the Federation, and that was the reason for bringing the matter up there. The fact that the Government were paying extra bonuses to meet the increased cost of buildings put up during the war showed that they knew perfectly well that the cost of building was increased, and that those who were now putting up buildings in respect of contracts made before the war were losing equivalent sums. He knew the frightful waste there had been in the cost of buildings for the Government. They had members in London who had been building houses for the working class where six men were doing one man's work and about half doing it, and they were all having their war bonuses. All these things showed that there had been panic legislation on the part of the Government to get their work done, but there had been a most flagrant refusal to put work out in the ordinary channels, whereas there were thousands of contractors in the country who would have been pleased to have carried it out at a *bona-fide* rate and a proper profit, instead of its being carried out in such a frightfully expensive way as it had been. They asked that the cases of hardship should be placed before the proper authorities with a request that legislation be passed and proper treatment be given those who were in the unfortunate position of having to carry out pre-war contracts. He moved: "That the officers of the Federation be requested to consider the question of pre-war contracts at a very early moment; to collect as much evidence as possible from members of the Federation, and to take steps to place the whole matter before the Government with a request that serious consideration be given to it with a view to assisting contractors to carry out their obligations."

Mr. N. R. Stirling (Liverpool) said the North-Western Federation discussed the matter twelve months ago, and the Ad-

ministrative Committee said that they did not see what could be done. He could give a good many illustrations of losses incurred.

Mr. Dove (London) seconded the resolution, and said he supposed 90 per cent. of the builders of the country were affected by pre-war contracts. Recently in contracts the Government had certainly gone some way to help builders. The people, however, whom they were most up against were the local authorities, most of whom had taken up a *non-possumus* attitude. The Government was putting enormous pressure on local authorities to shut down work. In the case of the erection of a big asylum for the London County Council the work had been suspended at the instigation of the Government, and terms had been arranged with the contractor by which he got back £10,000 of his £20,000 retention money; he was to be paid every farthing of the cost of the work done up to date, have £8,000 compensation paid him at once, and another £8,000 paid when he started the job again. He thought if the matter was laid properly before the Government something would be done.

The President said they had at present fifty or more cases before the Committee, but it was not a thing which they could deal with at a large meeting like this.

Mr. Sheppard (London) suggested that the best method of dealing with the matter would be by a carefully-worded memorial.

Mr. Easten (Newcastle-on-Tyne) asked if it was the intention to ask for compensation for losses on contracts with private persons.

The President said he took it the position was that where a builder had suffered from conditions which had arisen through the war some recompense should be made.

Mr. Moffat (Birmingham) could not see why the Administrative Committee had not taken action before. The operatives got what they wanted because they had an organisation which watched their interests.

Mr. Waring (Neath) said he had been hard hit, and he trusted the Federation would show Associations that it was a live body and try to get the grievance redressed.

Mr. Chessum (London) asked what about contractors who had met their obligations?

Mr. F. Higgs (London) suggested that the resolution be altered to read, "Consideration be given so that contractors may be recouped for losses incurred from war causes upon contracts entered into prior to the declaration of war."

The mover and seconder accepted the alteration.

After further discussion, Mr. Easten said his objection to the resolution was that it went too far. If they asked the Government to compensate them in respect of Government contracts, and also asked them to press the local authorities to reasonably consider the suggestion, they might get them to do so, but he could scarcely imagine the Government entertaining the idea of compensating builders who had lost money on private works. He moved as an amendment: "That the officers of the Federation be requested to consider the question of pre-war contracts at a very early moment; to collect as much evidence as possible from members of the Federation, and to take steps to place the whole matter before the Government, with a request that serious consideration be given to it so that contractors may be recouped for losses incurred through war causes upon contracts entered into with the Government and with public authorities prior to the declaration of war."

Mr. White (Sunderland) seconded the amendment, and said if they got the claim recognised by the Government, it would strengthen their hands with the private clients.

On a vote the amendment was carried by forty-seven votes to thirty-one.

Mr. E. J. Brown said he had no idea that members of the Federation thought a little of their fellow traders that they would not try to do anything for the men who lost by a private contract, but would help a man who had a Government contract to try and recoup himself.

Mr. Easten said he was interested in a £64,000 contract with a private person, and not to the extent of 1d. in regard to public work, but he felt he would be in a better position to go to the private person if the Government recognised their responsibilities. He did not believe the Government would give the resolution a moment's consideration, and he moved the amendment in what he considered the best interests of the Federation.

On the amendment being put as the substantive motion,

Alderman Bowen moved as an amendment: "That the officers of the Federation be requested to consider the question of pre-war contracts at a very early moment; to collect as much evidence as possible from members of the Federation, and to take steps to place the whole matter before the Government, and that the question of the scope of the representations to be made shall be left to the discretion of the Committee."

Mr. Wallis seconded the amendment which after further conversation was agreed to.

It was further decided that the Council should co-opt four members of the Federation to assist them in the matter.

Conciliation.

It was agreed on the recommendation of the Administrative Council that the following unions be affiliated to the National Scheme of Conciliation: Navvies' Union, Builder's Labourers' and General Labourers' Union, Amalgamated Slaters and Tilers' Provident Society, National Union of Gas Workers and General Labourers of Great Britain and Ireland, United Order of General Labourers of London, and National Union of Operative Heating and Domestic Engineers.

The Chairman explained that an application had been received for affiliation from the National Federation of Slate Merchants, Slaters and Tilers, but they were a perfectly distinct body, and he asked that the matter be referred to the Administrative Council for further consideration.

This was agreed to, and it was also referred to the Council to decide what representation on the employers' side of the Board was to be accorded to any sub-trade employers' association admitted to the scheme.

Mr. Renshaw expressed the opinion that London had not found the conciliation scheme all that they were led to expect when they were induced to join, and mentioned cases in support of his remarks.

Mr. Storrs thought that London would eventually find the benefits of the scheme, and said that in the North they found the men's leaders quite willing to carry out the signed conditions whether their members liked it or not.

Wallpaper Discounts.

The Secretary reported that this matter had been discussed at the Council meeting, and they recommended that Messrs. Foster, McHugh, and Renshaw, and a member of the Lancashire Federation t

selected, be the representatives for a further conference with the merchants and manufacturers on the questions raised by the reduction of the well-established trade terms observed hitherto in respect of wall-papers.

On the motion of the President, seconded by Mr. Stirling, the recommendation was affirmed.

Apprenticeship Question.

The President said a Sub-Committee had the matter of apprenticeship under consideration. The Institute of Builders had a scheme, and they as a Federation had a scheme and they were trying to get something out of the two schemes which would be helpful to the trade.

Mr. Renshaw (London) said the Institute of Builders had drawn up a full statement of their case, which had been sent to the trade journals, and he asked for a sympathetic consideration of the matter by the delegates.

Mr. Cooke (Preston) and Mr. Lloyd (Leath) also urged the importance of the matter.

Empire Trade.

The following resolution of Mr. Smet was formally moved by the President in his absence: "That it be an instruction to the Administrative Committee to consider proposals from associations which have for their object the combining of the federations and trade organisations in this country and the Empire, with a view to protecting, consolidating, and extending the trade of the Empire, and particularly with a view of advising the respective Governments on all matters affecting trading relations and the welfare of the people; and if satisfied with the proposals of any, to give their tentative report pending a report to the Council in its next; and that the President and Secretary collect all necessary information for the Administrative Committee."

Mr. Foster seconded the motion.

Mr. F. G. Rice (London) suggested the advisability of working with the Associated Chambers of Commerce.

The motion was carried.

Officers.

On the motion of the President, seconded by Mr. E. J. Brown, Mr. W. F. Wallis was elected President.

It was also agreed that Mr. J. Storrs be elected senior vice-president; Mr. Willcock, junior vice-president; Mr. S. Easten, Treasurer; Mr. F. L. Dove, senior hon. auditor; and Mr. A. J. Forsdike, junior vice-president.

It was decided to hold the July meeting at Brighton.

CONCERNING WAR MEMORIALS.

Professor S. D. Adshead, F.R.I.B.A., delivered, on January 26, at University College, Gower Street, the first of a course of six lectures on war memorials, in which, with many lantern pictures of monuments ancient and modern, he dealt with the significance of the war memorial in its relation to the national and political outlook.

It was generally assumed, he said, that the purpose of a war monument was to celebrate victory, and so it was with most; but others might be more correctly described as monuments to peace. With examples from both countries, he contrasted the arrogance and realistic brutality in modern German work with the refined idealism of France. The spirit of the later German utterances in stone had undoubtedly been war and still war, for by war, it was thought, shall Germany

prosper. This was exemplified by the monument at Leipzig and the great Bismarck monument at Hamburg, and, on the other hand, by some fine conceptions by French artists commemorating the war of 1870, and earlier Napoleonic monuments.

The barbaric ideas of Germany found expression in strong, uncivilised, archaic interpretations of the power of the war lords, and innumerable monuments of that character had been inspired by the Military Party.

With examples from Greece, Rome, and from modern productions, statues, columns, arches, pyramids, temples, and bridges the lecturer illustrated the symbolic and realistic methods of expression, and came to the conclusion that architectural treatment was essential to a great conception, while sculpture made the most direct appeal to human sympathy.

An Artist's View.

In a letter to "The Times" on the articles on "War Memorials" to which reference is made in our editorial columns, Mr. W. Rothenstein, the painter, writes: "The practical administration of artistic affairs has of late years been so much in the hands of collectors and museum directors that the services living artists and craftsmen can render their fellows have been little understood and almost completely neglected. The absorbing passion for collecting, legitimate enough when it is a question of private satisfaction, is regrettable when it takes the place of a healthy creative rivalry between our cities. For our civic and educational authorities have been entirely occupied in encouraging the appreciation of particular works of art and not in their creation. Hence today the city which has built the largest art gallery and has acquired the handsomest pictures prides itself on being the most art-loving city. But the best pictures collected from the ends of the earth will never take the place of a blithe or powerful spirit making itself felt in the streets and squares of the town and within and without its public and private buildings. The guardians of our local groves and streams are never sought for; hence those young people who feel in themselves the stir of creation turn their eyes to the metropolis, knowing that once they have passed through the local art school no further encouragement will be given them at home; nor will they find a healthy incentive in London, where the collector and expert give or withhold a capricious patronage. But war, which destroys many things, also builds up many things. Let the public say: 'Can living architects, sculptors, painters, and other craftsmen put into any memorial we may wish to set up some spark of the radiant exaltation with which our sons bade us good-bye as they left us to go to the ships or into the trenches? Can our artists suggest a little of the love for all our sons left behind them, the familiar scenes and faces, memories of school and college, of the thousand common things of life which become so precious when we are parted from them?' If our craftsmen are approached in this spirit I venture to say there are such artists in England. It is the task of art to express this radiance and to suggest the significance of the reality behind everyday existence. If this radiance and this significance are sincerely desired by public and private patrons, we may once more get an art, robust, scholarly, but homely and genial, which will be in some measure at least an expression of the nation itself."

LEGAL.

Engineering and Building Contract.

Wellman, Seaver, and Head v. Skinningrove Iron Co.

January 24. Official Referee's Court. Before Mr. E. Pollock.

The hearing was continued of this action, in which the plaintiffs, Messrs. Wellman, Seaver, and Head, of Victoria Street, Westminster, sought to recover against Messrs. the Skinningrove Iron Co. the sum of £19,000 odd, the balance of £80,313 for constructing two steel furnaces, with the necessary building, at the defendants' works at Skinningrove, near Middlesbrough. (See our issues of January 5 and 19.)

Mr. H. W. F. Soward, engineer in the employ of the plaintiff firm, was recalled and, in further examination by Mr. Colefax, K.C., who appeared for plaintiffs, said that he first heard that there was an idea of using the furnace for the Talbot process in October. A sixty-ton furnace would not, in his view, be a furnace which would be used commercially for the Talbot process. As originally designed, the furnaces could not be properly called 120-ton furnaces. In the original design the angle of tilt was 20 deg. on one side and 12 on the other, which he had always found to work satisfactorily, but the defendants required a greater angle of tilt. He did not think it was necessary to further strengthen the walls as required by the defendants except as a matter of precaution when the alterations were demanded. The plaintiffs' contract was to erect furnaces suitable for the manufacture of steel, and the alterations certainly were not necessary for the manufacture of steel as the original contract stood. The alterations were rendered necessary because defendants wanted to use the furnaces for the Talbot process. The regenerators were originally to be taken down to a 22-ft. level, but that was altered by the defendants to 19 ft. below the ground level, which necessitated an increase in height and width.

In cross-examination by Mr. Bailey, K.C., witness said that he first visited the works in October, 1912, at which time the Talbot process had been for some time at work there, and the new furnaces were to be placed under an extension of the old building, and the Tapping platform was to be carried through to the three furnaces. The defendants had a seventy-five-ton crane and a forty-ton crane at work which were to be used for the three furnaces and be carried through from end to end on one level. In the details of the plant which the plaintiffs were going to erect there was room for differences of opinion, and experts held different views in regard to them. If the weight was increased, from whatever cause, the defendants were liable to pay for it. The alteration in the angle of tilt necessitated several other alterations, including an increase in the length of the rockers, of the tilting cylinders, and of the rams. It was a decided advantage to keep the angle of tilt as small as possible. Whatever process was used it was desirable that the furnaces should be drained occasionally, but he did not agree that it was necessary to have an angle of tilt of 30 deg. for that purpose.

The cross-examination of the witness had not concluded when the hearing was adjourned, it having been arranged that the Referee, with counsel, should in the meantime visit the Skinningrove works in order to make an inspection of the plant erected by the plaintiffs.

CONCRETE AND STEEL SECTION

(MONTHLY.)

SOME PRACTICAL POINTS IN REINFORCED-CONCRETE CONSTRUCTION.*

BY R. M. KEARNS, F.S.I.

Among the legions of writers on reinforced concrete is a panel doctor, who has contributed some information of vital importance. He has announced that reinforced-concrete buildings are "inimical to the growth of spore-bearing 'organisms,'" and has expressed the opinion that "with healthier homes we shall become a healthier race and a people no longer liable to rheumatism."

Points in Specification.

In dealing with H.M. new Stationery Office as a notable example of reinforced-concrete construction, Mr. Kearns quoted, with the permission of the Commissioners of H.M. Office of Works, the following extracts from the specification:

River or Pit Ballast.—To be free from sand and dust, must not contain any traces of calcareous, argillaceous, or other foreign matter, and to be broken into various sizes, so that all shall pass a $\frac{3}{4}$ -in. mesh and be retained on a $\frac{1}{4}$ -in. mesh. The sand to be screened out of the ballast; all passing the $\frac{1}{4}$ -in. mesh to be reckoned as sand.

Sand.—To be freshwater, river, or pit sand, absolutely clean and sharp, properly graded and varied in size; all passing a $\frac{1}{4}$ -in. mesh, and at least 75 per cent. passing a $\frac{3}{8}$ -in. mesh.

Cement.—The cement shall be Portland (slow setting) to comply with the British Standard Specification (1910) for Portland cement. The builder is to provide with each consignment the maker's certificate of quality, but such certificate is not to be taken as conclusive. Such tests as the architect may direct will be made from time to time, and no consignment is to be used until the architect has signified his approval. The builder is to deliver consignments in advance for use, so as to permit of twenty-eight-day tests being made without causing delay in the progress of the work.

Formwork.—The whole of the timber centering, etc., used for the formation of concrete work is to be constructed in a solid, rigid, and substantial manner. The centres to be so formed that they may be removed in portions without shaking or jarring the concrete. To be wrought thicknessed and close-jointed, except where walls and ceilings will be plastered, and also to all external work where boarding, rough from the saw, and close-jointed, is to be used. No part of the centering is to be removed until the concrete is thoroughly set, and until the consent of the architect has been obtained. The formwork is to be thoroughly cleared of shavings and rubbish, and must be hosed out before the concrete is deposited.

Concrete.—To be made up as follows:

Cement	...	1 cwt.
Sand	...	2 cub. ft.
Ballast	...	4 cub. ft.

To be sufficiently watered and mixed thoroughly, in an approved mechanical

appliance, to the satisfaction of the architect. Test cubes, 6 in. by 6 in. by 6 in., of the concrete are to be mixed by the builder from time to time as the architect may direct. These cubes are to have an ultimate crushing strength of 1,800 lb. per sq. in. at twenty-eight days. The concrete to be deposited in layers not exceeding three inches, unless otherwise permitted by the architect, and to be properly punned and consolidated. The reinforcement to be completely surrounded and covered. No traffic on or over the concrete to be permitted until it is thoroughly set. It is to be protected from frost, inclement weather damage, or too rapid drying, and kept well wetted. No steel, except binding rods or stirrups, is to be nearer than $1\frac{1}{2}$ in. to the external face of concrete, except in thin floor slabs, where the cover may be reduced to $\frac{3}{4}$ in. No concrete to be used which has been left standing and begun to set. Floors and roof to be finished smooth with a rule. The roof slabs to be laid to fall.

Granolithic Finish.—The upper half-inch of floors (except where otherwise specified) to be formed of 1 of cement to 2 of approved granite chippings to pass a $\frac{1}{4}$ -in. mesh and to be free from dust. To be laid while the reinforced concrete is green, and to be trowelled off to within an hour of laying. This surface finish to be in addition to the structural part.

Steel.—To be obtained from firms approved by the architect, and to be of such quality as to withstand the following tests: The ultimate tensile strength lengthways with the fibre is not to be less than twenty-seven tons, and no more than thirty-two tons to the sq. in. Specimen pieces of steel are to be bent cold until the ends close over a bar, the diameter of which is the same as that of the piece to be tested. The steel rods throughout are to be of the exact lengths and diameters shown on drawings. No welding or piecing of rods will be permitted, and they are to be bent where required to templates and while cold. After such smiths' work as may be required on the rods has been completed, the steel of which they are formed must present a smooth surface free from seams, flaws, or cracks. Great care is to be exercised in the fixing and maintenance—during the placing of concrete—of the steel rods in the exact positions shown on the drawings, and in securing the links and stirrups by which the rods are to be connected together in the positions shown for them, so that the position of the reinforcement in the finished structure may exactly correspond with the position as designed.

External Finish.—Render the reinforced-concrete work where exposed externally with Portland cement and sand in the proportion of 1 of cement to 3 of sand, $\frac{1}{2}$ in. thick, finished with an approved floated face. The finishing coat is to be applied before the backing is thoroughly set. The concrete is to be hacked to form a sufficient key for the rendering, and is to be cleaned and thoroughly wetted before the rendering is commenced.

Boiler Chimney.—To be lined to a height of 50 ft. with approved Staffordshire firebricks laid in fireclay, with all joints well flushed up. To have $1\frac{1}{2}$ in. air space between the firebrick and concrete,

ventilated as directed. The chimney is to be built clear of the building as shown on drawings.

Flues.—Smoke flues in chimney-breast are to be formed of terra-cotta pipes 10 in. in diameter and with butt joints.

Concerning Bills of Quantities.

Bills of quantities, Mr. Kearns thought should give the contractors the total quantity of concrete in "cubic yards," and the of steel in "tons." It may be argued that the contractors themselves are able to calculate these totals from the details given but it is not fair that they should be called upon to do so, and it would be better for all parties if the calculations were made by the quantity surveyor. If such totals were furnished, in addition to the detailed quantities which should only be priced, the contractor whose tender is accepted could at once make arrangements for obtaining his materials. Further, it is held by estimators that these total quantities are essential and important factors in arriving at the detailed prices on which the tender is based. The contractors would also ascertain the quantity of cement from the given for the concrete. On the proportions of 1 + 2 + 4 they would probably calculate at the rate of one sack of cement to one-third of a cubic yard of concrete. Thus, the number of yards multiplied by 3 would give the required number of sacks of cement; dividing this number by 204 (where each sack weighs about 204 lb.) the cement would be shown in tons.

The grand totals would also show the ratio of steel to concrete—generally about 2 cwt. of steel to 1 cubic yard of concrete—from which the average cost of the complete reinforced concrete at per yard cub could be ascertained and on occasion made use of when measuring for certificates in respect of advances. In this connection the surveyor would allow about 60 ft. super. of formwork for every yard cube of the finished concrete.

Debatable Points.

Pronouncements were invited by the author on several points about which there is diversity of opinion, among them being the following:

"While some authorities allow the formwork to be covered with a wash of lime before the concrete is deposited, in order to ensure good surfaces when the centering is struck, others regard it as unnecessary, and are satisfied if the boards are kept well wetted. And while the formwork is treated with "concrete oil" in some cases it is condemned in others. It is certain, however, that the formwork should not be oiled if the concrete is to be plastered.

Concrete Flat Roofs.

Coming to the concrete roof or flat, with its covering of asphalt, the question arises whether the concrete should be finished smooth with a rule or receive while it is green, a floating of cement. Either course provides the necessary even surface for the asphalt, which should be applied in two coats, the first being more bituminous than the second. When this method is followed very little trouble arises from expansion and contraction although, in the case of a very wide flat

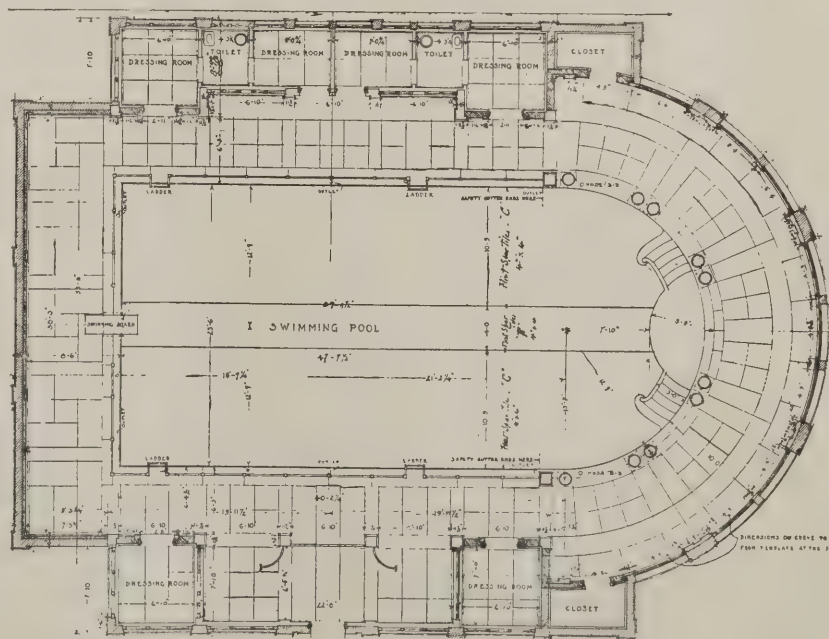
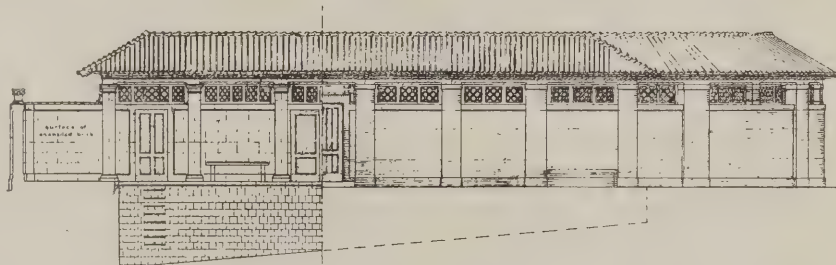
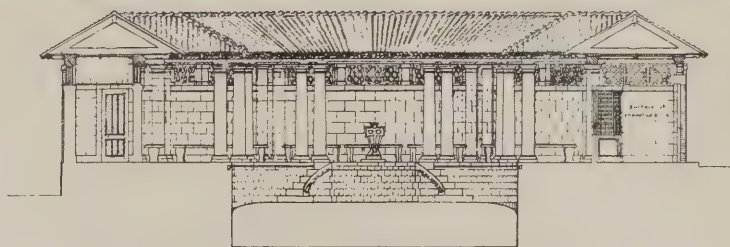
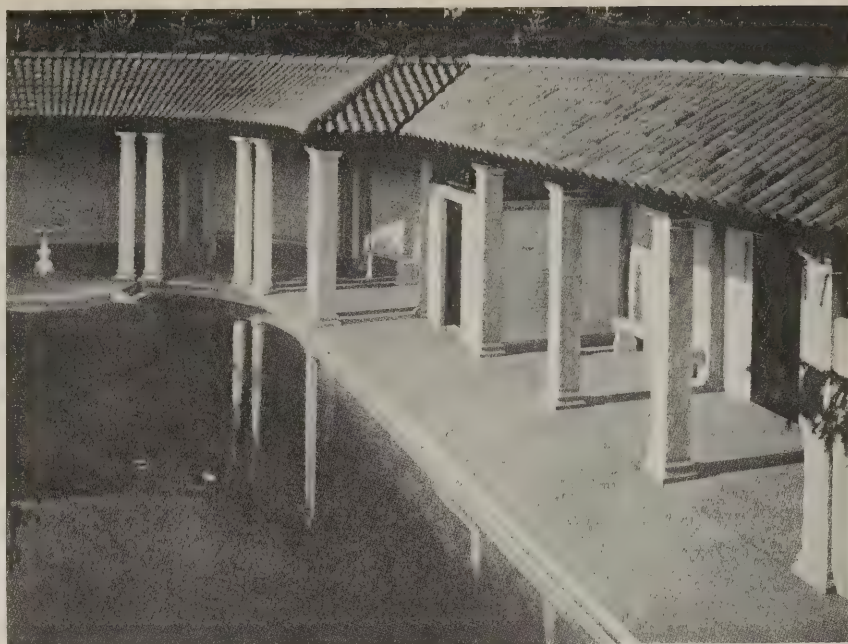
* Extracts from a paper read at a meeting of the Surveyors' Institute, January 10, 1916.

unbroken by skylights, it would perhaps be advisable to form expansion rolls in the asphalt. One well-known firm of asphalters prefers to lay the asphalt (two thicknesses of $\frac{3}{8}$ in.) on stout canvas nailed to a cement floated surface with zinc nails. It appears that asphalt will adhere very firmly to concrete walls or slabs if the surface of the concrete is first painted with coal tar. The latter should be "heated in small quantities, brought just to the boiling point, and then applied immediately."

Architectural Treatment.

It is very probable that reinforced concrete will be used increasingly for building purposes in the future; its many advantages—economical and hygienic—being already widely known and appreciated. It is possible that this material will develop the "Rectangular" style of architecture, in which the perpendicular lines of piers or counterforts are met by the horizontal lines of sill and string courses—but it seems to be specially adaptable for treatment in Eastern styles, with minarets, cupolas and domes, and with heavy cornices and projecting balconies to give shadows and artistic effect. Architects will have occasion to bear in mind the stereotyped phrases "simple massiveness" and "noble proportions" when dealing with this material. It is to be hoped that they will not be afraid of plain surfaces, as we have no wish to see the external faces of concrete buildings "embellished" with series of bulls'-eyes, or set out in sunk or raised panels. Cottages should be designed to harmonise with their surroundings, and might be tinted with pleasing effect, or partly enclosed by trellis-work for supporting the climbing rose or geranium. Factories present a more difficult problem, and they will always look aggressively ugly if erected in rural districts where any structure that is not time-worn appears incongruous. There is no reason, however, why they should be of the skyscraper pattern—the huge perforated box placed on end—and neither is it necessary that the sky-line should be broken by a horrible display of saw-toothed roofs. A little ingenuity, stimulated by some consideration for the owners of adjoining property and the feelings of the passing stranger, should render it possible to build on utilitarian lines without creating monstrosities at sight of which a lover of rural scenes is brought to a standstill with an indescribable sense of pain.

Let us see to it that our reinforced-concrete buildings are as beautiful as art can devise and funds permit. Mistakes have been made in the past: they have taught us much, but there is still much to learn. We must, therefore, press on to a fuller knowledge of this wonderful building material—of the science that governs its construction and the art with which it should be applied.



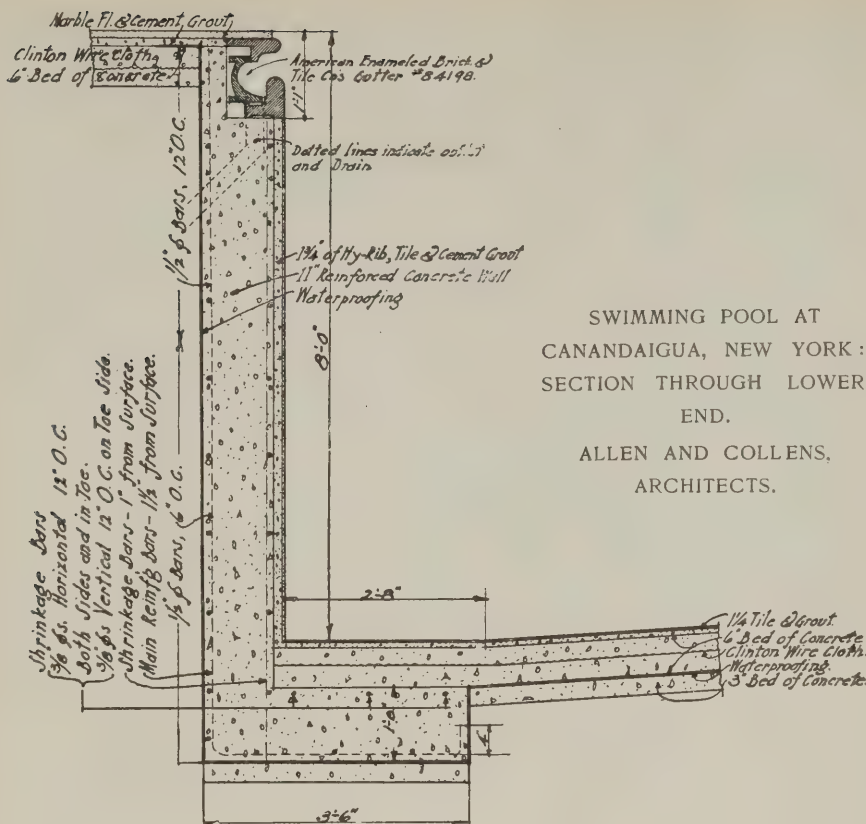
SWIMMING POOL AT CANANDAIGUA, NEW YORK.

ALLEN AND COLLENS, ARCHITECTS.

CEMENT-AND-TILE SWIMMING POOL.

Of this swimming pool at Canandaigua, New York, the exterior is treated very simply in tapestry brick, with dark green Spanish tile roof and broad eaves, and is almost entirely hidden in masses of shrubbery.

Inside, the white and grey marble colonnade and floor tone in with the white enamel brick of the walls, and present a cool contrast to the dark reddish brown woodwork of the cornice and ceiling



SWIMMING POOL AT
CANANDAIGUA, NEW YORK:
SECTION THROUGH LOWER
END.

ALLEN AND COLLENS,
ARCHITECTS.

beams and the dark green of the roof. Drinking fountains and ornamental marble seats against the walls furnish the colonnade, which faces to the south.

The tile used in the finish of the walls and floor of the pool was brought from England, and is a rust flint-spar tile, 4 in. by 4 in.; it is turquoise in colour, with a band of darker tiles, extending from one end of the pool to the other to enable those diving and swimming under water to maintain a straight line and not injure themselves against the walls by turning sideways. The general lay-out of the pool and dressing-rooms is shown on the plan, and needs no explanation. The construction of the pool itself is interesting, and a detail of that work shows the method employed. It is provided with a special life-rail and gutter on either side, and is 8 ft. in depth at the lowest point, shallowing to about three feet at the rounded end of the pool, where the marble steps enter it from the colonnade.

The water is brought from Lake Canandaigua and is passed through filters before entering the pool. A boiler and pump-house erected for the purpose can force the water from the pool through the filters and boilers, and raise the temperature of the pool to 10 deg. per hour.

The architects are Messrs. Allen and Collens.

LOADS ON HIGHWAY BRIDGES.

A joint committee of the Concrete Institute, the Institution of Municipal and County Engineers, and the Institution of Municipal Engineers, which was appointed in 1911 to investigate the question of the loads to be provided for upon highway bridges, has prepared a draft report. Professor Henry Adams was elected chairman, and, although the report will yet have to undergo considerable modification owing to the rapid development of military motor traffic during the war—the conclu-

sions arrived at are based upon information obtained by October, 1912—nevertheless a valuable work has been done, which has every likelihood of receiving the approval of all municipal authorities. In the report, bridges are divided into three classes, and it is recognised that the technical data accompanying the document are sufficient to enable the design of bridges to be carried out in such a manner as to fulfil the conditions laid down by the committee. As, however, the actual calculations will have to undergo a certain amount of alteration when, as is anticipated, the War Office has given its views on certain points, it would serve no useful purpose to go into this aspect of the report now, quite apart from the fact that the recommendations are to be treated as confidential until the final form is arrived at.

An important aspect of the matter, however, is the position of railway companies as regards their overbridges. Recent legal decisions have rather changed the general views with regard to this. It had generally been assumed that a railway company could prohibit traffic going over their bridges which was too heavy for them, provided the weight was not less than the figures laid down by the Local Government Board under the Heavy Motor Car (Amendment) Order, 1907. It has recently been held, however, that railway companies must maintain their bridges in such a state of strength as to bear the traffic that may reasonably be expected upon them. This decision will undoubtedly be taken to the House of Lords. Meanwhile, the joint committee have hopes of being able to bring the railway companies into line with themselves, but the first reading of the report suggests that this means practically the reconstruction of a large number of railway bridges.

Military use of the highways has no doubt considerably emphasised the value and importance of this very necessary investigation.

ECONOMY IN REINFORCED CONCRETE DESIGN.

In an article contributed to the "Contract Record," Mr. M. T. Cantell insists on the necessity for better designing in reinforcing to secure the greatest strength in concrete members and at the same time effect the strictest economy. Concrete, it is recalled, has a crushing strength when a month old of upwards of 2,500 lb. per square inch. This increases with age. Intension, however, its ultimate resistance is about 200 lb. per square inch, while steel ranges from 60,000 to 100,000 lb. per sq. in.

In reinforced concrete, properly designed and made, these two materials act together as one, with the advantages of both and the disadvantages of neither. Consequently, we have the strength, toughness, and rigidity of steel, the appearance of stability and strength, the steel permanently insulated from oxidation, no loss from age, a saving in the cost of construction, speedy erection, very little or no maintenance charge, and a material adaptable to all forms of architectural and structural work. Of the valuable properties of the work, few will exist if the work is not properly designed and executed. In designing, strength is considered the chief point. Strength, however, should be considered with economy. An economical structure would have a certain arrangement of beams, slabs, columns, etc., all spaced and proportioned in the most efficient manner, with a definite percentage of reinforcement, all determined with regard to the loading with a view to obtaining the strongest, most satisfactory, and cheapest structure.

For economical structures the most important factors to consider are—the ratio of depth to breadth of beams, the percentage of reinforcement, and the general lay-out of beams and columns. For rectangular beams the most economical section is the ratio of 1 to 3 breadth to depth. The utmost attention should be paid to the percentage of reinforcement, as great waste is often occasioned through an excess of steel being used. The fundamental principle underlying beam design should be carefully studied, the chief factor concerned being the neutral axis of the beam and what governs its position. Knowing this it is only a simple mathematical problem to design a formula whereby we can determine the section of the beam that will contain sufficient concrete above the axis to take the compression, and the percentage of reinforcement necessary to develop the required stresses.

Wages Increased in Nottingham.

The Nottingham Building Trades Conciliation Board met recently to hear applications from the bricklayers, joiners, masons, and builders' labourers for an advance of wages on account of the increased cost of living caused by the war. After full consideration the following resolution was agreed to: "That the bricklayers, joiners, and stonemasons' wages be increased on January 22, 1916, to 10½d. per hour, with a further increase of one halfpenny per hour to take effect on April 1, 1916, and to terminate three months after the declaration of peace; the wages then to be 10½d. per hour. That the builders' labourers' wages be increased on January 22, 1916, to 8d. per hour with a further increase of one halfpenny per hour to take effect on April 1, 1916, and to terminate three months after the declaration of peace; the wages then to be 8d. per hour."

A WATERPROOFING CHART.

"Pudlo," as described in an article on "Waterproofing Processes," in the 1916 edition of "Specification," is a fine white powder which is mixed with neat cement in varying proportions according to the purpose for which it is required. The usual sand or other aggregates are then added. The material is manufactured in England, from an earthy oleate of such nature that it enters into a chemical amalgamation with cementitious substances, and its action is thus described: A chemical action is set up in the cement owing to certain ingredients in the cement being absorbed or dissolved by "Pudlo." It is the presence of these ingredients in cement which makes it porous. When they are dissolved, the cement has no crevices left in it, and percolation cannot occur. The material, it is claimed, makes cement easier to work and actually improves its strength both in tensile and compression resistance. It does not affect the setting on the natural shade of cement, in which its presence can only be detected by analysis and microscopical examination. Emphasis is laid on an expert's analytical report, which states that the addition of the powder to cement does not react detrimentally on the cement after prolonged periods and it has successfully passed several Government tests.

The manufacturers of "Pudlo," Messrs. Kerner-Greenwood and Co., King's Lynn, have published, in the handy form of a leaflet, an interesting chart that was made last year by the Japanese Imperial Government to demonstrate the waterproofing value of various products. In this chart, which is here reproduced, the waterproofer marked No. 1 is an American product, No. 2 is Japanese, and No. 3 is German; "C" representing ordinary unwaterproofed cement; while "Pudlo" is designated by the insertion of its name. Columns 3 and 4, it is pointed out by the manufacturers, demonstrate that Pudlo cement with 2 of sand and also with 3 of sand is more efficient than the other waterproofing when used in a neat cement mixture. The makers inform us that "Pudlo," which is an entirely British product, is used in thirty-eight foreign countries, and that they will be pleased to send to any enquirer descriptions of it in French, Dutch, Spanish, Russian, and Japanese.

R.I.B.A. NOVEMBER EXAMINATIONS.

PASS LIST.

The following are the results of the November examinations of the Royal Institute of British Architects:—

Preliminary.

The Preliminary Examination, qualifying for registration as Probationer R.I.B.A., was held in London and Manchester on November 23 and 28, 1915. Of the thirty candidates admitted seventeen were exempted from sitting and the remaining thirteen were examined, with the following results:—

	Number examined.	Passed.	Relegated.
London	8	6	2
Manchester	5	4	1
	13	10	3

The passed and exempted candidates—numbering altogether twenty-seven—have been registered as Probationers. They are:—

G. R. Acton (Rainbow Hill, Wores.)	L. De H. Hutton, Westminster.
E. H. Adams (Norbury).	E. L. Jenkins (Bridgend).
L. M. Austin, Forest Hill.	J. S. Kwok (S. Kensington).
V. E. Broad (Croydon).	J. Mather (Manchester).
W. F. D. Calthorpe (Plymouth).	W. Park (Birmingham).
E. Campbell (Blyth).	A. L. Priest (Cardiff).
G. C. Chandra (Bombay).	R. V. Roberts (Derby).
C. E. Chicken (Belvedere).	W. G. Seaton (Pontypridd).
P. S. Dixon (Lewisham).	D. J. Simpson (Bristol).
T. C. Fagg (Lewisham Park).	L. F. Smith (Derby).
R. C. Gibson (Swansea).	A. W. Stewardson (Cardiff).
E. C. Henriques (Westminster).	E. Sutcliffe (Todmorden).
	N. B. Weekes (Liverpool).
	A. J. West (Blackburn).
	R. Whitworth (Reading).

Intermediate.

The Intermediate Examination, qualifying for registration as Student R.I.B.A., was held in London and Manchester from November 19 to 26. Fourteen candidates were examined, with the following results:—

	Number examined.	Passed.	Relegated.
London	9	4	5
Manchester	5	3	2
	14	7	7

The passed candidates, who have been registered as Students, are as follows, the

names being given in order of merit as placed by the Examiners:—

D. O. H. Davies (High-bury).	G. W. H. George (Swindon).
W. L. Roberts (Bredbury).	A. Gray (Hertford).
W. H. Bowman (Manchester).	O. A. Roff (Sheffield).
	J. T. Stone (Hendon).

Exemptions from the Intermediate.

The following Probationers, having produced satisfactory evidence of their training and qualifications, were exempted from sitting for the Intermediate Examination and have been registered as Students:—

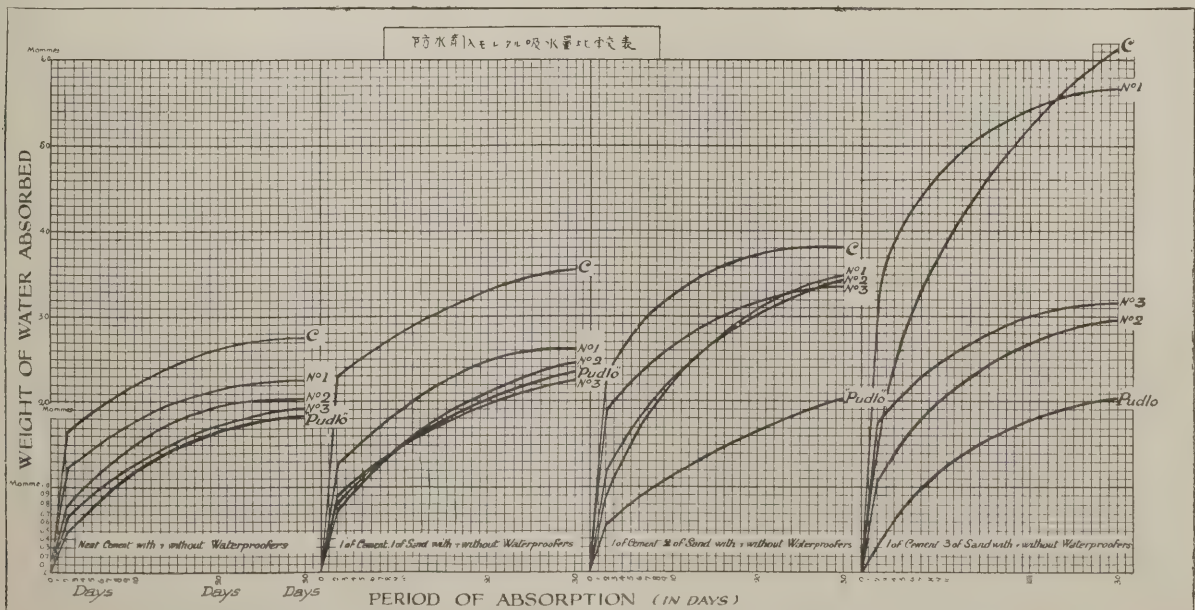
E. C. Henriques, Westminster. (Bombay School of Architecture).	L. De H. Hutton, Westminster. (Dunedin School of Art and Design).
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In accordance with the special concession granted by the Council to Probationers serving with the Forces who are eligible for the Intermediate Examination and whose Testimonies of Study have been approved, the following were also exempted:—

J. R. Ashworth, Accrington. (Lieut. 5th Bn. East Lancs. Regiment.)	T. M. Morgan, Aberdare. (Inns of Court O.T.C.)
E. A. Bell, Leeds. (Corporal, York Hussars.)	W. G. Norris, Kentish Town. (68th Coy., A.O.C.)
H. W. Couchman, Tottenham. (153rd Battery, R.G.A.)	K. Palmer, Manchester. (R.A.M.C.)
T. A. Dryden, Sketty, Glam. (University of London O.T.C.)	N. R. Paxton, Glasgow. (Glasgow University O.T.C.)
R. R. Gaskell, Hull. (1/1 East Riding Field Company, R.E.)	D. S. Prosser, Llanishen. (Inns of Court O.T.C.)
G. E. A. Greensill, Cannock, Staffs. (Birmingham City Bn. Royal Warwick Regiment.)	A. I. Richards, Clapham Common. (Inns of Court O.T.C.)
R. T. Grummant, Peckham. (Artists' Rifles.)	C. D. St. Leger, Cosham. (2nd Lieut., 13th Hampshire Regiment.)
A. O. Hector, Farnham. (Corporal, Princess Patricia's Canadian Light Infantry.)	R. R. Shipley, Gateshead-on-Tyne. (2nd Lieut. 63rd Northumbrian Division, R.E.)
H. Jones, Aylesbury. (19th Bn., Royal Fusiliers.)	C. W. Smith, Tottenham Court Road. (Artists' Rifles.)
S. Lee, Hull. (R.G.A.)	T. O. Thirtle, Harrow. (R.A.M.C.)
J. H. Lumb, York. (1/6 2nd London, R.E.)	L. J. Williams, Penzance. (2nd Lieut., 2/5 Bn. Duke of Cornwall's Light Infantry.)

Final and Special.

The Final and Special Examinations, qualifying for candidature as Associate R.I.B.A., were held in London from December 2 to 10. Of the twenty-nine candidates admitted to the Examination, ten passed, and the remaining nineteen relegated in various subjects. The successful candidates were as follows:—



WATERPROOFING CHART PREPARED BY THE JAPANESE IMPERIAL GOVERNMENT.

C. C. Cheek (Wandsworth Common).	J. H. Hull Garstang (Lancs.).
H. Colbeck (Ealing).	C. S. Picton (New Cross).
C. H. Gale (Glasgow).	H. P. Rainger (Cheltenham).
A. B. Hamilton (Cartwright Gardens, W.C.).	J. W. Rough (London).
C. E. Hill (Sheffield).	G. Vinden (Reading).

The number of failures in each subject of the Final Examination was as follows:—

A. Design	8
B. Construction—	
(1) Foundations, Walls, Roofs, etc.....	12
(2) Iron and Steel	14
C. Hygiene	11
D. Properties and Uses of Building Materials.....	6
E. The Ordinary Practice of Architecture.....	11
F. The Thesis	2

Ashpitol Prize.

On the recommendation of the Board of Architectural Education, the Council have awarded the Ashpitol Prize for 1915 to Mr. P. J. Adams, of Woodford, Essex, he being the Candidate who has most highly distinguished himself in the Final Examinations held in 1915.

Royal Gold Medallist, 1916.

Sir Rowand Anderson, LL.D., F.R.S.E., of Edinburgh, has been nominated by the Royal Institute of British Architects as the recipient of the Royal Gold Medal for 1916, in virtue of his executed works, his services in the cause of architectural education, and his high ideals concerning the art of architecture.

CIVIC ARTS ASSOCIATION.

The Civic Arts Association was inaugurated at a meeting held on January 28 at the Mansion House, London, the Lord Mayor, its first president, in the chair. In his opening speech he said they were not a moment too soon in making preparations to meet the demand for war memorials. The very notion that the country might suffer, as in the past, from a multiplication of memorials which were ugly, trivial, and commonplace was enough to fill them with shame and alarm.

Lord Beauchamp moved that the Civic Arts Association be formed. He said the association should encourage local authorities to use, as well as train, local artists. Most of them had opened art and technical institutes, which turned out excellent craftsmen; but, unfortunately, when they wanted some work of art executed they came to London. He could not understand why people who bought pictures painted hundreds of years ago should be called art patrons. He wished to see more support given to contemporary art, and especially more encouragement given to craftsmen. It was important also that the craftsman should be given due credit for his work. Among the worthy war memorials which he hoped would be provided under the advice and guidance of the association were one to Belgium and another to France expressive of our undying gratitude to the peoples of those countries for their share in the war.

Professor Selwyn Image seconded the motion.

Professor W. R. Lethaby urged that every town and village should form a committee of public welfare, and that every city should have a society like the excellent London Society, to look after its amenities. The arts that mattered and needed cultivation were the civic arts. They were the arts of civilisation; and the arts of civilisation were civilisation itself.

Mr. George Clausen, R.A., said that several members of the Royal Academy, including the President, were in sympathy with the objects of the association, and most earnestly hoped that before very long there would be given at the Academy an

exhibition of arts and crafts. It was generally recognised that the impulse to revive arts and crafts, which was now being felt all over the world, had originated in England; and though our painting, sculpture, and architecture were looked upon by foreign artists as nothing out of the way, they agreed that what was interesting and typical in English art was to be found in the work of the small band of men who were reviving and continuing the old domestic arts of the country. As a rule our people did not know of the great ability in domestic arts which was to be found in this country, and he welcomed an association which would bring it to the general notice.

NEWS ITEMS.

Waterproofing an Underground Lavatory.

Glazed bricks and tiles are often affected by dampness in tunnels and other subterranean structures. We are interested in hearing that the City Surveyor of Sheffield has used, with satisfactory results, Pudloed cement for waterproofing an underground lavatory.

Reinforced Concrete Regulations.

In last week's agenda, the Building Acts Committee of the London County Council recommend that the seal of the Council be affixed to sixty copies of the regulations made by the Council under section 23 of the London County Council (General Powers) Act, 1909, with respect to the construction of buildings wholly or partly of reinforced concrete and with respect to the use and composition of reinforced concrete in such construction.

Big Bridge Contracts.

A correspondent of the "Daily Telegraph" is authoritatively informed that the contracts for no fewer than 127 lattice-type girder bridges, ranging from 6 ft. to 60 ft. length, for the extension of the Mymunsinch-Dhairab-Bazar section of the Assam-Bengal railway system, and for fourteen bridges ranging from 20 to 60 metres span, for the Federated Malay States railways, have just recently been awarded to the Cleveland Building and Engineering Co., Ltd., of Darlington. Early delivery is stated to have been an important factor in the placing of these orders.

Pre-War Contracts.

In the House of Commons, on January 20, Mr. W. T. Wilson, the Labour member for Westhoughton, asked the Prime Minister whether he had been asked by the London Master Builders' Association to meet a deputation from that association to discuss the question of suspending or cancelling contracts entered into prior to August 4, 1914; and whether before coming to any decision on the matter, he would meet a deputation of the representatives of the workmen engaged in the building trade. Mr. Asquith: No, sir. I have received no such request.

High Wages for Carpenters.

At a meeting of Foleshill Rural Council an account was submitted for payment by a local builder for work executed, and attention was directed to the fact that 1s. 1d. an hour was charged for the services of a carpenter. The Chairman thought this in excess of the standard rate of the district, but the Surveyor said the builder in question was governed by the rate of pay in the Coventry district, where wages were very high. At Bedfordworth a considerably lower rate prevailed, and it would be as well if they introduced labour from that quarter.

LONDON COUNTY AND WESTMINSTER BANK, LTD.

Mr. Walter Leaf, deputy chairman, presiding at the annual ordinary general meeting of the London County and Westminster Bank, held on January 26, after remarking that from the point of view of their deposits and their gross profits the year would appear to have been one of great prosperity, proceeded to say: But they must not allow themselves to forget that for every individual in the nation there was a paramount duty to save—to save to the uttermost in order to stop, and, when the time came, to replenish the terrific drain upon our accumulated wealth, which was implied in the unparalleled effort to which the nation had braced and was bracing itself. He paid a tribute to the memory of Sir Thomas Jackson, whose death they deeply deplored, and extended to Colonel Lord Goschen, their chairman, their deep sympathy in the loss of his son, who had given his life gallantly fighting on the plains of Mesopotamia, and went on to mention that no fewer than 1,000 of their staff had been released and were on active service, and that 1,100 more had been attested and many of them had already joined the colours. Practically the whole of the eligible staff had in one way or another offered itself.

Turning to the financial side of their work during the past year, he thought they must be struck most of all with the manner in which the financial machine had adjusted itself to the new conditions, and the smoothness with which it had worked.

The banks, both of London and of the country, had been united in their action on behalf of the great national cause, and had had little or no difficulty in reconciling it with their duty to their shareholders, their depositors, and their customers. The bank had in full measure the confidence of their customers, the foundation on which all banks must rest.

There had never been any very great pressure for advances; indeed, in the general trade of the country there had been rather a tendency to reduce loans of old standing. The balance-sheet showed the large scale on which their bank, in common with all the banks of the United Kingdom, subscribed to the War Loan. In addition to £470,000 written off profits, the bank had also had to appropriate the £250,000 which they had at the end of 1904 as investments depreciation account. They had also provided for their contingent liability under the guarantee to the Yorkshire Penny Bank. That they should have been able to do all this while still paying a dividend of 18 per cent. and without touching their reserve, which still stood at £4,000,000, was evidence of a strength of which they might be proud. Their gross profit had been the largest on record. The same was the case with their expenses. The large increase was more than accounted for by the increase in income-tax and salaries to men on active service. Except for these they would actually have shown a decrease in expenditure, in spite of the rise in prices in almost everything they had to purchase. War conditions had greatly favoured the growth of the Paris Bank which they owned. Business had increased there with great rapidity, and the second year of its history showed an excellent profit, which had more than covered the loss inevitable in the first year's working of a new bank.

He moved the adoption of the report, which was unanimously agreed to.

The retiring directors were re-elected and the auditors re-appointed.

THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, February 9, 1916.

Volume XLIII. No. 1101.



DETAIL OF FRIEZE ON THE OSPEDALE DEL CEPPO, PISTOJA, BY GIOVANNI DELLA ROBBIA.

(See page 62).

THE ARCHITECTS' & BUILDERS' JOURNAL.

FEBRUARY 9, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1101.

EDITORIAL.

BY the nomination of Sir Robert Rowand Anderson for the Royal Gold Medal, Scotland and its representative for this occasion are both somewhat tardily honoured. Scottish names, it is true, are not lacking in a list of medallists that includes a Donaldson, a Fergusson, a Gibson, and an Aitchison, but for the moment we cannot recall a previous instance of the medal's being addressed direct to Scotland. Yet it is eighteen years since the completion of the New University Buildings and the McEwan Hall in Edinburgh must have convinced Englishmen that Scotland was not irretrievably and exclusively addicted to "the Scottish Baronial style," and that Scottish architects were capable of producing monumental work on their own soil as well as Government buildings in Whitehall, and banks, insurance buildings, and mammoth hotels in London and the English provincial cities *passim*. It was in 1898 that the medal was awarded to Professor George Aitchison, who on his splendid record was clearly entitled to it, and so the psychological moment for honouring Anderson was perforce allowed to pass. In the intervening years the medal has seven times gone abroad—once to Italy (Professor Rodolfo Lanciani), once to the United States (Charles Follen McKim), thrice to France (Auguste Choisy, Honoré Daumet, and Jean Louis Pascal), once to Germany (Dörpfeld), and, last year, to Canada (Frank Darling). Nevertheless, the compliment to Scottish architecture will be greatly esteemed, more especially since it comes at a moment when it can be construed—without in the least degree derogating from the personal merit of the recipient—in part as signalling the distinctly progressive movement observable in Scottish architecture within recent years, and in part as marking English admiration for the splendid loyalty and valour of our Scottish compatriots in the present crisis.

A natural impulse to extend a very cordial welcome to the Civic Arts Association, which, as was recorded in last week's issue, was inaugurated at a meeting held at the Mansion House, London, on January 28, is tempered by one or two rather discouraging reflections. These mainly refer to the discrepancies which so often leave an aching void between promise and performance, or between aim and achievement. But while experience shows the folly of being over-sanguine about immediate and direct results, it demonstrates also that associations like this have often "builted better than they knew." They focus old ideas and generate new ones, and, by leavening the community with them, effect larger reforms than those that can be assessed and tabulated. In a word, they are highly educative, and their best results, like the most important effects of all true teaching, are diffusive and imponderable. Supporters of such institutions, however, are apt to lose their ardour when they fail to see concrete

evidence of zeal and activity, and the propagandist policy grows feeble from inanition as well as from other forms of exhaustion. There is no question as to the need for establishing or confirming the principles and promoting the practice which this new association has so clearly conceived, and we wish it all success in its campaign against bad art and poor craftsmanship. Particularly we hope that it will have the rather exceptional good fortune to steer clear of the cranks and fads, the cliques and conspiracies, that have wrecked or crippled so many similar movements. At its inception, it certainly gives promise of a sane and liberal attitude towards the somewhat delicate functions it proposes to assume.

* * * *

Concerning boards of guardians, architects may sorrow not as those without hope. Now and again a tiny chink in these boards lets in through the otherwise dense dull wood a ray of cheering sunlight. Thus, when the House Committee of the Tending Board of Guardians proposed that a new day-room should be built on a site now occupied by lavatories, and that specifications and plans should be prepared by "the Master" (a beautiful and an enviable designation, which seems in this instance—though we are not quite sure—to apply to a workhouse or infirmary official), a member moved that an architect should be employed to do the work. Not only did this enlightened and audacious gentleman actually find a seconder, but his proposal derived a certain amount of implicit sanction from the chairman, who remarked that "when the Master had been employed on other works, he had been compensated with a fee that was practically the same as an architect's fee." But the vice-chairman restored the balance by rapping out, "No, sir; nothing in comparison." In the upshot, "the proposition to employ an architect was lost, only the proposer and seconder voting for it." And so, whichever way one looks at it, "Freedom broadens slowly down from precedent to precedent"; for although on this momentous occasion (the work to be done is estimated to cost £300) precedent is with the Master, there is comfort in the parallel but opposing precedent of what two noble souls did and dared for architecture. They, at all events, would be no parties to the Board's practical application of the saying, "To him that hath much [the Master] shall more be given, and from him that hath nothing [the hypothetical architect] shall be taken away even the little that he hath." To be quite serious, it is scandalously unfair that public bodies should conspire to deprive professional men of any fraction of their legitimate means of earning a livelihood in hard times. Although in the present instance the sum involved is insignificant,

the principle remains, and would justify formal protest by the organisations that are supposed to look after the interests of architects.

* * * *

Mr. Runciman's Black List, as it is being freely called, will, by including "building materials," among the goods of which the importation is to be restricted, make wood so scarce and dear as to give a decided impetus to some of "the newer methods of construction." As the dearth of timber will synchronise with an extraordinary demand for working-class dwellings, and as it will be impossible to follow the Government example of economy, at Eltham, of putting English oak into labourers' cottages, it would seem that the experimental use of reinforced concrete in this class of work will be greatly extended, the increased price of timber rendering the ordinary practice no longer the cheaper. Consequently the concrete-block-making machine will find increased opportunities, simultaneously with the patent partitions and other substitutes for woodwork and lath-and-plaster, and the change is in no way inimical either to the architect or the builder.

* * * *

Hotel building, decoration, and equipment will, it may be supposed, see many changes in consequence of the war. Whether they are to be more sumptuous (which seems impossible) as a reaction against the stresses and hardships of enforced economy at home and of fighting abroad, or whether, on the other hand, most people will have acquired Spartan habits, and will affect "to scorn delights and live laborious days," thereby avoiding luxurious hotels, are questions that need not be seriously discussed. Mr. R. C. Vaughan, an experienced hotel manager who has given the "Daily Graphic" his views on the future of hotels after the war, seems to be troubled with no misgivings on this point. He takes it for granted that hotel visitors will continue to expect "luxuries and the perfection of living and service," and one remembers the antiquity and significance of the saying, "Shall I not take mine ease at mine inn?" The only considerable change that Mr. Vaughan foresees is that after the war the British hotel will be more generally British-owned and British-served. If this forecast is correct, it follows that in design and decoration hotels will be more distinctively British. It is true that already they are almost always designed by British architects, and adorned by British decorators; but it is equally true that in both respects the influence of Continental and American models is predominant. For architects the important point is, will the war change that? More dignity and repose in the elevation, and more originality, more native character in the interior decoration would certainly be welcome, and would probably be more highly appreciated by American and Continental visitors than the rather poor compliment paid them in a more or less futile endeavour to imitate the styles with which they are assumed to be familiar in their own countries. This is one of the many ways in which, having at length "found" ourselves, we should dare to be boldly British; which, however, may possibly come to the same thing as being boldly cosmopolitan.

* * * *

When "the second part of the European War" begins, it will be found, as a public speaker has remarked, that valuable weapons and machinery will be handed over to us as a legacy from the first part. There will be no great need to beat the swords into ploughshares, for much or most of the machinery now producing munitions of war is applicable to other uses. Valuable lessons in organisation will also have been learned, and it is hoped that a more conciliatory tone

will prevail among employers and employed. We must work together as we have fought together, shoulder to shoulder. Obviously, there is some danger of reaction—from strenuousness to slackness, from consolidation to fission—but the period of relaxation should be short, if our country is to maintain the place among the nations which is hers by right not of brutal conquest, but of pre-eminence in the arts, sciences, manufactures, and commerce, and, above all, by her inherent humanity and love of justice.

* * * *

A neat phrase of Sir Sidney Colvin's, in a letter of his on the question of closing the museums, is worth noting. Commenting on the inadequacy of the steps that have been taken for the preservation of the contents of museums, he remarks, "To keep them exposed as at present, and at the same time useless to students and the public, is a course combining both of the two evils for which the circumstances give opportunity." A very palpable hit; for, as Sir Sidney says, the only reasonable excuse for not taking far stronger measures has been the fact that the collections remained accessible for the use of students and the enjoyment and education of visitors. From this dilemma the authorities shall hardly escape on the plea of economy, the paltry saving really amounting, as Mr. Gilbert Chesterton might say, to a substantial loss. Dr. Percy Gardner, the Professor of Classical Archæology in Oxford University, is on the same side of the argument as Sir Sidney Colvin. Formerly for sixteen years an official of the British Museum, and for the past twenty-eight years closely connected with the Ashmolean Museum at Oxford, he justly claims to know as well as most people "how the constant and inobtrusive work which goes on at such places tends to check the forces of our day which make for materialism and anarchy." With respect to the Ashmolean he declares, "We are determined to keep the museum open," because a large proportion of the visitors, who have hardly fallen off in numbers, consists of wounded soldiers. "Are we to shut them up for recreation," he asks, "to the picture palace and the public-house?" If, however, the museums are to be closed, certainly their collections should be made safe.

* * * *

When the Parliament House of the Dominion of Canada, of which the destruction by fire was cabled to England last Friday morning, was opened by His Royal Highness Albert Edward, Prince of Wales, it was regarded as "the most notable example of a successful adaptation of Gothic to modern requirements." The main block was modelled on Italian Gothic of the thirteenth century. The Western Departmental block, with its Mackenzie Tower, 272 ft. high, is a later addition. The main or south front was 470 ft. long and 40 ft. high, and the Victoria Tower over the front entrance was 255 ft. high. In the centre of the north front was a semi-detached polygonal hall, 90 ft. in diameter, used as a library. The total cost of the original building was about a million sterling. Anthony Trollope praised the "beauty and grandeur" of the buildings, but the author of "Barchester Towers" could hardly be expected to free himself from the craze for Gothic which obsessed his contemporaries. The Southern Departmental block is in a modified Italian Renaissance mode. It will be recalled that about three years ago Mr. Edward White, Sir Aston Webb, and Mr. Maurice E. Webb prepared a scheme for an extension to house the law courts and certain Government departments, but—fortunately, as it turns out, these additions have not yet been erected. It is stated that the fire originated in the reading room, which was of wood finish. *Verb. sap.*

HERE AND THERE.

WE so constantly encounter the parrot saying, "English domestic architecture is unequalled throughout the world," that it seems like heresy to question it. But should we stop to think, it will be clear that the assertion needs modification. Many of us are satiated with the miscellaneous jumble that is so commonly considered to be proper for a piece of domestic work, a house perhaps with mixed elements of gables and roughcast, Queen Anneish or Norman Shawish porches, windows and chimney-pieces. This sort of thing cannot be regarded as in any way pure. Unlike good Tudor or good Georgian, there is no homogeneity of style, and too often the cleverest men cannot avoid drawing out still one more surprise from their bag of architectural tricks. It is in comparison with such work that I admire so greatly the domestic buildings of that brilliant American architect, Mr. Charles A. Platt. No architect in America has ever done domestic work to approach his. It is stamped with character, and is full of fire and spirit, plainly showing a close study of the past, but not in any sense transcriptive, being imbued with the



CHARLES A. PLATT.

architect's own distinctive personality. In view of his unique position in America, therefore, I am sure that many readers who are familiar with illustrations of Platt's buildings will be interested to see the accompanying portrait, taken from the last issue of the "Brickbuilder." Looking at this, it is opportune to recall the architect's career.

He did not set out with a definite architectural aim, and go through the canonical process of training in a School of Architecture, but started as a painter and etcher. When twenty-one he migrated to Paris, and studied at Julian's under Boulanger and Lefebvre, devoting himself especially to landscape painting. Then he wandered in Italy, where the spell of the formal garden exerted so strong an influence on him that he wrote a book about it, and began himself to design formal gardens. By this time a corresponding desire to design buildings made itself manifest, and he became an architect as he had become a painter—irresistibly, and out of creative instinct. A compatriot says: "Appreciation of his first buildings must take account of their indebtedness to the Italian villa, but even at this point the derivative factors in a design of his are of a very subtle sort, and as the chronological sequence develops it very soon discloses the artist's essential independence of his Renaissance models. The

façade into which he may introduce a Florentine note is expressive of a plan based upon the daily needs of an American household: his Italianism, in fact, is at bottom nothing more than a love of simplicity, of pure line, of rhythmic proportion. For some years these predilections were illustrated altogether in the solution of a single problem, the country house. More recently a large apartment house in New York and office buildings there and elsewhere have engaged his attention. In these fields, too, he has affirmed his salient qualities of taste and beauty. At present he is preparing the plans for the Freer Museum at Washington, a monument of unique significance, inasmuch as it is to house a single collection and to express a particular idea. The drawings foreshadow a structure of rare interest."

Of course I know there are plenty of architects to whom Platt's work does not appeal. But it is no use trying to adjust one's opinion to please everybody; that leads straight to having no clear principles at all, and explains why modern English domestic architecture includes such a large amount of hoch-potch, the work of men who really do not know what they are after: architects of whom it may be said, as was said of a certain speaker: "He has nothing to say, and can't say it." But to those who have no liking for the kind of domestic architecture which I esteem so much, who see but small merit, for instance, in what, to me, is the brilliantly successful and clever design of the houses on the Duchy of Cornwall estate at Kennington—to those, Charles Platt will not be any kind of architectural giant. To bring the matter down to a sharp division of opinion, take Mr. Baillie Scott's own estimate of what a house should be. Here is what he says: "Mere conveniences, much as I appreciate them, would not fulfil my demands, and the strict and bounded formality of scholarly architecture leaves me cold and dissatisfied. Give me rather the house of romance. I would have as its main apartment a hall or house-place of ample floor space, broad and low. Great oak beams should span it, and great oak boards compose its floor. At one end, a deep and wide angle with one of those open chimneys in which one can see the blue smoke from the wood fire swirling upwards would please me better than any narrow modern grate with its petty art tiles and mantel. On the wide hearth the proper appointments of the fire-side would twinkle and gleam in the firelight. And on the walls I would have no machine-made picture rails, no friezes or any paperhangers' art, only innocent spaces of white, varied perhaps with a tapestry hanging on such solid timbers as the structure of the house requires. There would be a few rugs on the oak floor, and the few furnishings would be of the easy home-made kind which used to be made by the old English craftsman. The house should, indeed, breathe out those happy influences which go with this home-made kind of work, without a hint of the glib and shallow dexterities of the factory or the products of the modern trade art. And, above all, I would have nothing too fine or dainty for its uses, and should refuse to be intimidated by the silent tyranny of artistic furnishings. This hall must be of such a homely kind that my dog may enter there without rebuke. It must not merely look like a piece of a cabinet-maker's shop window nor represent a correct reproduction of any period. Nor must it appear as a museum, with its walls and floor space crowded with a jackdaw horde of art treasures. There should be no more furniture there than the uses of the room demand, and the quality I should most appreciate would be restfulness and quiet simplicity."

This is Mr. Baillie Scott's vision of what a house should be, and reading it I find items that shriek for



Photo: Bedford Lemere & Co.

CURRENT ARCHITECTURE (SERIES II.). XVIII.—HAZLITT HOUSE, SOUTHAMPTON BUILDINGS, LONDON, E.C.
RICHARDSON AND GILL, FF.R.I.B.A., ARCHITECTS.

OF THE
UNIVERSITY OF ILLINOIS



Photo: Bedford Lemere & Co.

CURRENT ARCHITECTURE (SERIES II.): XIX.—HAZLITT HOUSE, SOUTHAMPTON BUILDINGS, LONDON, E.C.: MAIN ENTRANCE.
RICHARDSON AND GILL, FF.R.I.B.A., ARCHITECTS.

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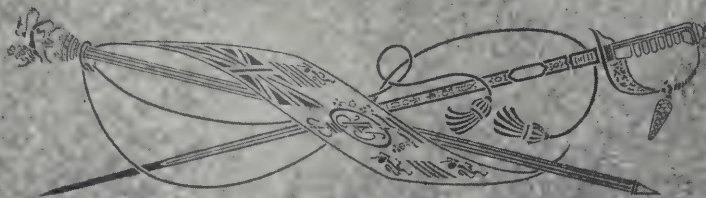


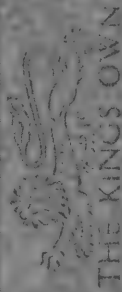
Sed miles. sed pro patria



In Loving Remembrance of
GEORGE LAWRENCE HARFORD
Elder son of George and Helen Harford
Lieutenant in the 2nd Bⁿ The King's Own
Killed in leading a charge near Ypres
February 17th 1915 Aged 23 years.

*He loved & was beloved
Followed & so could lead
Died fighting for England
Lives to serve his God.*





THE KING'S OWN

*To the Glory of God and in memory of
Lieutenant GEORGE LAWRENCE HARFORD, son of
Canon G. Harford, Vicar of this parish, who served in the
1st & 2nd Battalions of the King's Own Royal Lancaster Regt.,
the above tablet has been erected by those nearest & dearest
to him, while his fellow worshippers have also placed stained
glass in the seventh clerestory window opposite, representing
JONATHAN AND HIS ARMOUR BEARER.*

MONUMENTS. XII.—TABLET TO LIEUT. GEORGE LAWRENCE HARFORD IN MOSSLEY HILL PARISH CHURCH, LIVERPOOL.

G. H. TYSON SMITH, SCULPTOR.



SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.). XXI.—BROWN HOUSE, REIGATE: GARDEN FRONT.

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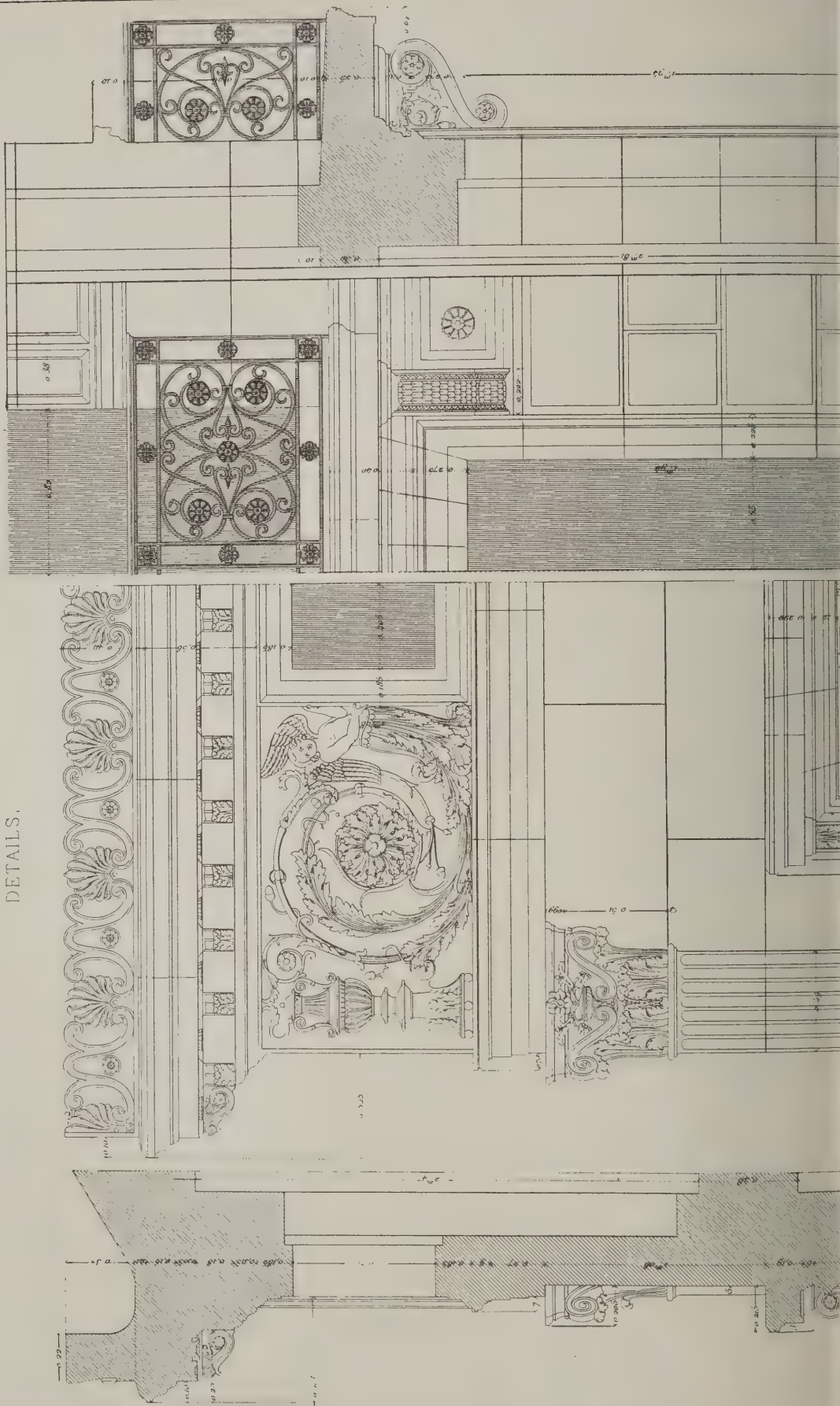


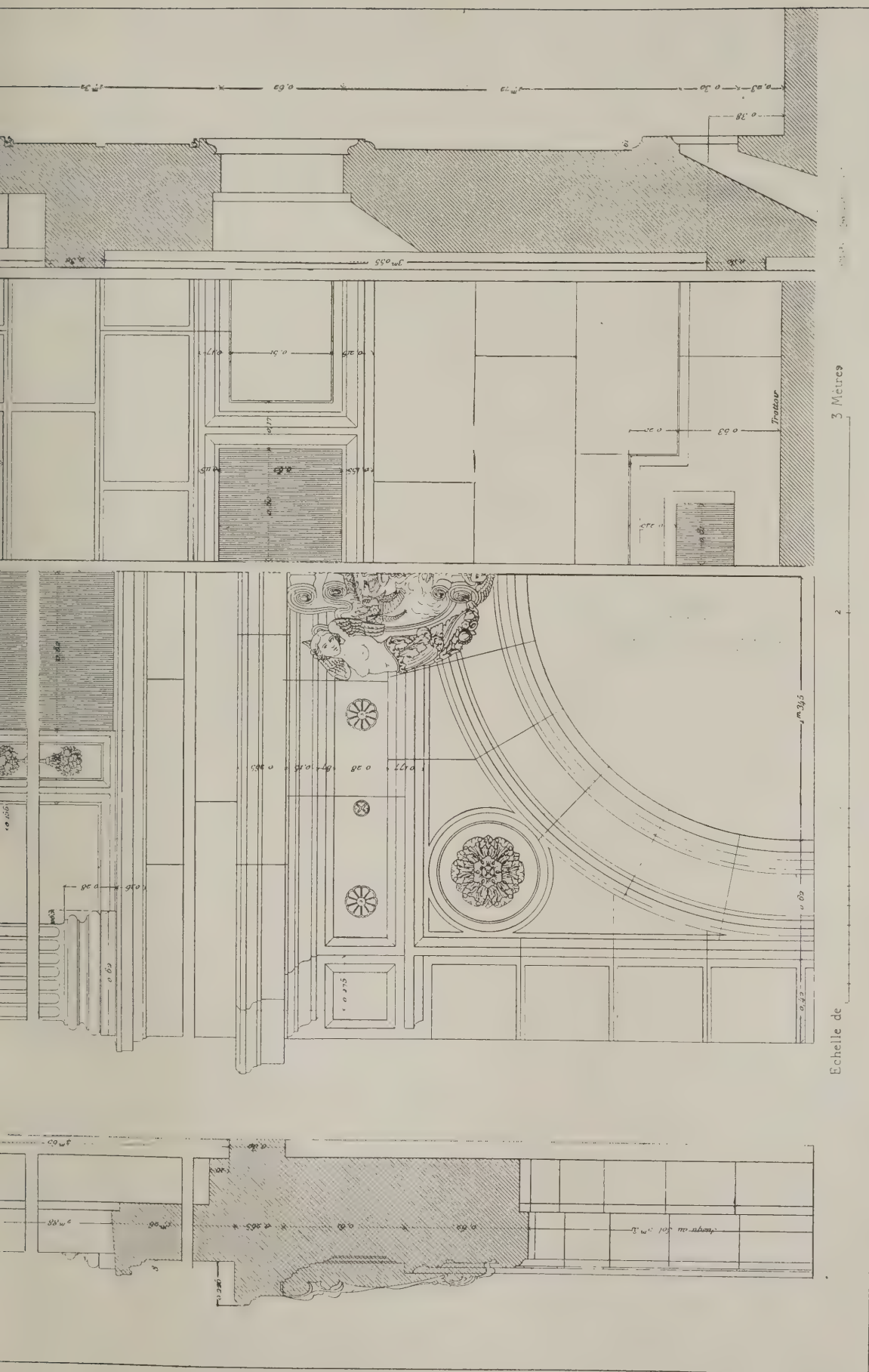
MODERN DOMESTIC ARCHITECTURE (SERIES II.). XXVIII.—FANHAMS HALL, WARE: THE GREAT HALL.

W. WOOD BETHELL, ARCHITECT.

ALUMNI
OF THE
UNIVERSITY OF ILLINOIS

DETAILS.





NINETEENTH-CENTURY FRENCH ARCHITECTURE. XX.—HOTEL PORTALLES. PARIS.

J. F. DUBAN, ARCHITECT.

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comment. What Mr. Baillie Scott appears to be intent upon is, to transmogrify us into yeomen of Shakespeare's day, or perhaps Chaucer's. I do not question his sincerity; admittedly he is in earnest, and I will readily acknowledge that he is head and shoulders above the motley crew who imitate him. If we want a replica of a fifteenth-century farmhouse, Mr. Baillie Scott can provide it for us, if anyone can; but the point is, the thing is impossible, an anachronism, and the embodiment of a wrong-headed view of what modern architecture ought to be. I, for one, have no wish to masquerade about in home-spun and buskin in a barren room with great oak beams in the ceiling and great oak planks on the floor, and as for the blue smoke from the wood fire, I can see that equally well in a delightful basket grate of the Adam period, or in one of our excellent modern hearth-fires; and the firelight will sparkle just as well on a nicely-shaped brass poker as on an iron crowbar, or a fancy-free toaster; and if we must have the dog in the picture, he, being a vitiated modern beast, will be all the better pleased for a Turkey rug to lie upon.

* * * *

As we can see from his "vision," Mr. Baillie Scott wants to do the thing thoroughly. But those who copy him lack his spirit. When they are in the midst of evolving their farmhouse, they have misgivings, pinches of the uncomfortable. They want it all to look very real, but the conditions of modern life upset the idea. They must have the old cavernous fireplace, of course, but it will be necessary to put in a few radiators somewhere in the room; the old lattice windows are essential, but they will need to be a bit bigger, and the long low room will really have to be a bit higher; the rusty knocker on the door is frankly charming, with an old-world air about it, and, after all, we can easily pop on an electric bell press-button, quite a small one, and very unobtrusive; while as for the lighting arrangements, candles of course are delightful—the light is so soft, and spreads such a pleasant glow over everything, but it is astonishing how hot the room gets when so many candles are alight; besides, they are expensive, and require a good deal of looking after; so that is why we have got those electroliers—the jolly Flemish ones which everybody likes. After all, one must be reasonable.

* * * *

I have not yet seen the garden village for workers at Woolwich Arsenal which has sprung up within the past year on an estate of more than 160 acres at Well Hall, though I have heard, among other things, that, deal being unobtainable, its houses have oak joinery—solid oak, as some people delight to say, though oak is not a wood that must be used preciously in the form of veneer: and not having seen this garden village I will not venture on any personal estimate of it. But I cannot pass unnoticed the illustrated article in the "Daily Chronicle," wherein the writer expresses his immense satisfaction that Well Hall "has four miles of roads, not one of them straight, and hardly a dozen houses are in a line together. It has old footpaths running across it—through its gardens, and even by covered passages through its houses—in the most irregular delightful way. And not a dozen of its dwellings are built in the same style or coloured externally in the same fashion." Taking this as a popular estimate, we can see what a lot of educative work has yet to be done before the general public can be made to realise that uniformity need not be monotony—that architectural merit is to be sought in a unified scheme of related character rather than in a jumble of features and materials, and that there is no particular virtue in devising a scheme of meandering roads instead of straight ones.

UBIQUE.

THE PLATES.

Hazlitt House, London, E.C.

THESE premises, on an irregularly shaped site in Southampton Buildings, have been erected by Messrs. Chessum and Sons, as offices for their own use. The architects, Messrs. Richardson and Gill, prepared the general plans of the building and half-inch and full-size details of the front elevation. The internal details were dealt with by the builders. The structure is fire-resisting throughout, with exceptionally good lighting, central heating, and other attributes of modern practice. Hazlitt, the essayist, lived in Southampton Buildings a century ago, and acting on the suggestion of the architects Messrs. Chessum named their office building after the famous author. Another interesting point in connection with this building is that the bulk of the Portland stone used for the façade originally formed part of the front of the old General Post Office at St. Martin's-le-Grand. Plans of the building are reproduced on page 64.

Monuments in Mossley Hill Parish Church, Liverpool.

The illustration shows the wall monument which has been erected in Mossley Hill Parish Church, Liverpool, in memory of Lieutenant George Lawrence Harford, son of Canon Harford, rector of the parish. It is in Shap limestone, with letters and trophies in lead, the portrait relief being in bronze. In the same church a stained-glass window to Lieutenant Harford has been inserted, and our second plate shows the tablet referring to this window. Mr. G. H. Tyson Smith, of Liverpool, was the sculptor.

Brown House, Reigate.

The date of this charming house may be taken as 1784, which date is carved on a stone block in the cellar; and there is evidence to support the suggestion that William Thomas was the architect. Thomas, who was the architect of Rowland Hill's chapel at Blackfriars, published a volume of his designs, and one of his favourite and distinctive treatments is a pediment enclosing a medallion hung with festoons of husks, such as appears on the garden front of this house at Reigate. The piers at either side of the front are derived from Early Georgian work, but the delicacy of the cornice is distinctly Later Georgian, as, too, are the windows with their thin bars. The best view of the house is a corner view from the roadway, but it is not possible to get a satisfactory photograph from this point; and though the view which we publish is delightful in monochrome, the reader will appreciate that much of the charm of the original must inevitably be lost by the absence of colour—the glowing red of the brickwork, the green of the creeper and of the lawn, and the grey of the slates on the attic roof.

Great Hall, Fanhams Hall.

Fanhams Hall is a very extensive country house to which many additions and alterations have been made by Mr. W. Wood Bethell. The Great Hall is the chief feature of the interior. It is entered at one end from a porch that opens on to a courtyard, while at the opposite end is a winter garden. The ceiling has oak beams, and the walls are hung with tapestries, which, with the rich carpets, the window hangings, and the candelabra, give to the apartment an air of much comfort.

Details of Hotel Portallies, Paris.

The plate shows details of the façade of the Hotel Portallies, Paris (by Duban). The frieze and cornice, the iron balustrading, the carved keystone, all exhibit a gracefulness and freshness that are immediately arresting.

THE BUILDER'S POINT OF VIEW.*

BY JAMES BROWN.

REALISING that the title of the paper was too comprehensive to be taken in the larger sense, the author proposes to deal with a few points which in his opinion are of importance as affecting the relations between the building owner, the architect, and the builder.

The Present System.

From the building owner's point of view, the present system of carrying out work under contract at an amount based on a competitive estimate is perhaps as near perfection as any reasonable person can (or ought to) expect. Under it the building owner knows beforehand exactly what the work will cost; and even if there are deviations he knows the cost of such will be based upon the schedule of prices deposited with the architect, which is part and parcel of the contract.

From a builder's point of view, however, the present system, though perhaps sound in its general principles, is capable of improvement in some of its details, and the time would appear to be ripe for overhauling and revising. Under the present system there is a very material difference between the positions occupied by the building owner and the builder, in that the data supplied to the building owner are complete and definite in every way, so that he knows beforehand exactly what he has to meet, whereas the data supplied to the builder are often incomplete, and have, therefore, to be supplemented by more or less inaccurate estimates of the cost to the builder of various parts of the work he binds himself to undertake when he submits his tender, though the amount of such costs is only capable of being ascertained when the work is completed.

Over-Estimating and Under-Estimating.

To estimate correctly beforehand the cost of a job, and to compile a tender which will in competition secure a contract on a remunerative basis, is obviously an operation which requires the utmost care, skill, and judgment.

When a builder accepts an invitation to tender for a job his first business is to obtain all the information he possibly can which might affect directly or indirectly the amount of his estimate, and upon the completeness and trustworthiness of this information will chiefly depend the accuracy of such estimate.

Through the architect he will be provided with information in the shape of conditions of contract, drawings, specifications, and bills of quantities. From answers to the various enquiries he has sent out he will obtain cost of materials, transport, etc., particulars as to the regulations and fees of the various local associations, and the local working rules and rates of wages of the operatives in the various branch trades: while from visits to the site he will learn exactly its position, nature, and means of access.

So far so good, but this information alone will not enable him to complete his tender in all respects. To do this he must gauge with reasonable accuracy the following contingencies: (1) The probability of variations in the price of materials; (2) weather risks; (3) the capabilities of the local operatives and tradesmen; (4) the

effect which local customs and habits may have on prices, and many other points that may present themselves.

Unfortunately the information available to a builder when trying to form a just estimate of these four and similar items is very limited and uncertain; but, still, all the risks of forming a judgment on such matters must be solely borne by himself, and *rightly so*. There still remain other and more indefinite liabilities, such as:—

(1) Claims for Damage to Roads.—These depend to a great extent on the construction of the roads, which unfortunately can only be ascertained when put to the test; they also depend on the views held by the various local councils and their road surveyor. (2) Increase in Operatives' Wages.—These are affected by the influence which the agitators in the various trades unions can at any particular time bring to bear on their members, and also by the position in which the master builder may be placed in regard to the supply of labour. (3) In the case of a considerable amount of excavation or draining, quantities frequently stipulate that the builder must provide for everything necessary, although he has no opportunity, except at considerable expense, of ascertaining what he is likely to encounter. (4) War Risks.—We have got these. It is impossible to estimate against them, and similar risks, with any degree of accuracy and fairness to both parties, and at present it is simply a gamble, with the odds against the builder. In my opinion these are risks which the building owner should undertake, as, when all is said and done, he is the responsible man, and the man who hopes to reap the profit.

The R.I.B.A. Form of Contract.

So far as the R.I.B.A. form of contract is concerned, it may perhaps not be perfect and up-to-date in every respect, and I believe steps are now being taken to ensure its revision and amendment; but, so far as I know, it is at the present time the only form of contract officially recognised by the R.I.B.A. and the Institute of Builders, and until its revision and amendment have been mutually agreed upon and officially confirmed by these bodies it is the only form of contract any builder should be asked to sign.

Without wishing to interfere in any way with these associations, who may be working for the revision and amendment of the form of contract and the present system, I will venture to point out a few defects and submit a few ideas for consideration.

Builders' Liabilities.

At the present time the liabilities which a builder is required to undertake in respect of workmen's compensation, common law, etc., National Health and Unemployment Insurance, Fire Insurance, etc., are usually indicated in the preliminary and general conditions of bills of quantities. It would be an advantage to have these items shown in detail and at the end of the bills of quantities. Personally, I should like to see them included in the summary as definite items, each to be priced out separately.

The Clerk of Works.

Where it is intended to appoint a clerk of works, the name of the gentleman appointed to the post should be announced before the tenders are made up, because, without benefiting his client's work in any

way, he may easily put the builder to large amount of very unnecessary expense, and although I should be the last to deprecate the work and value of these gentlemen, I, as a practical man, can tell you that in spite of the immense value and absolute necessity of a clerk of works on every important job, these gentlemen are not always well chosen. I am nevertheless prepared to say that a really competent and conscientious clerk of works is not only of value to the architect and his client, but also to the capable builder.

It is desirable that the setting-out should be officially checked before any work has been executed, and if the architect can be represented at the setting-out, so much the better, as his presence there would obviate many irritating and costly disputes.

Prime Cost and Provisional Amounts.

In the case of prime cost sums or provisional amounts included in quantities it is desirable that the present scramble for discounts should be abolished, and proper understanding arrived at. I should like to suggest a fixed (and reasonable) discount or percentage to which a builder should be entitled, and for which he must carry out certain specified duties, such as receiving, unpacking, and storing the goods, etc. A builder should not be required, as at present, to provide for payment of carriage and cartage, etc., when he has not the slightest idea what the goods will consist of, nor where they will come from. In fact, the provisional amount should include free delivery of the goods at the job.

Appointment of Specialists.

Another point I should like to make is that the nomination and direct employment of specialists, etc., by the building owner is a rapidly extending practice which calls for careful consideration with a view to regulating and amending the conditions governing this practice. I should be possible to secure a workable co-ordination between the work of the builder and the specialist. At the present time the interests of the two are often diametrically opposed.

Bills of quantities usually include, somewhere or other, the words, "Do all cutting, making good, etc., for all trades, including specialists." On the face of it, this seems a simple proposition but as a matter of fact it has of late years become the most unruly and unmanageable infant any unfortunate man was ever asked to hold. Several attempts (more or less successful) have been made to put this on a fair and businesslike footing. Perhaps the best arrangement, and it is one of which I have had practical experience, was as follows: All branch tradesmen and specialists were required to provide and include in their tender for all cutting away, reinstatement, making good, etc., in all trades that would be required by them in the execution and maintenance of their contract, such cutting away, etc., to be done in an efficient and satisfactory manner by workmen skilled in the various trades in which these operations were required, and at the cost of the trader or specialist for whose benefit they had been done. In default, the architect had the power to employ other workmen to carry out the work, and to charge the cost against the offenders. The exercise of this power was attended with most satisfactory results. I am of opinion that the liability

* Extracts from a paper read before the Manchester Society of Architects.

or cutting away, making good, etc., should be as much as possible placed upon the shoulders of the specialist or branch tradesman, seeing that it rests with him by good management to reduce this to a minimum, or by bad management to increase it to a very serious quantity. As an alternative, I suggest that a provisional amount to cover the cost of such cutting, etc., be included in quantities, and that such work be carried out in a proper and efficient manner by skilled workmen as required, for which weekly vouchers of time and materials would be submitted.

Certificates and Payments.

In issuing certificates, much unpleasantness to the builder could be avoided if such certificates clearly stated in detail the various amounts included for each special and branch trade.

Sometimes there is a certain amount of delay in the issue and honouring of certificates. This may or may not be avoidable, but where there is delay it is invariably the builder who suffers in consequence. Suppose, for instance, we take a job of £10,000 that has to be completed in twelve months. This roughly means 200 of work per week. When the amount of work executed amounts to £1,000, the builder applies for a certificate, and in due course is granted one for, say, £800. This he presents to the building owner, and sooner or later he receives a cheque in discharge. It often happens that some weeks elapse between the date on which he makes application for a certificate and the date he receives payment from the building owner. In the meantime he has been proceeding with the work, and has perhaps expended another £800 or £1,000 on the job before the first certificate is honoured. If this procedure is repeated, it may easily mean that, in addition to the retention money, there is a floating balance of anything up to £1,000 so due to the builder practically the whole time the work is in progress. This is a difficult matter to overcome, but I suggest that where a builder can show that the building owner is not honouring the certificates as promptly as he might reasonably be expected to do, the architect should take this into consideration, and be rather more liberal in the amount and frequency of his certificates. For some reason or other the financial position of the builder appears to be ignored by both architect and building owner. Needless to say, resulting financial arrangements eat up a considerable proportion of the builder's profits.

It appears to me to be quite wrong that a builder should be put into the position of arguing with himself whether he dare for policy's sake bring pressure to bear upon the architect to issue certificates and to see that they are met.

Date of Completion, Final Certificate, and Retention Money.

It has always appeared as if date of completion were a very elastic matter which could be construed by the various parties concerned in a widely different manner. I have known cases where the building owner has been in occupation of the premises for weeks, and contended that, inasmuch as several very small jobs were not quite finished off, the contract was not complete. Surely this is wrong. When a builder has in the broad sense completed the work he originally contracted for, that should be taken as the date of completion, and the period of maintenance should commence on that date.

It is very desirable that all day or deviation sheets should be submitted by the builder weekly, and that such sheets should be dealt with promptly (and as they arrive)

by the architect or surveyor. At present they are often held over until completion, and not only does this entail the loss of a considerable amount of time in dealing with them, but the value of the work they represent is not always taken into consideration when interim certificates are issued.

There is a general feeling amongst builders that the present practice of holding large amounts as retention money without any allowance being made to the builder for bank interest, is not reasonable. If a building owner is to have the benefit of such an amount of money during the period of retention, he should in all fairness be called upon to pay a reasonable rate of interest. It is also felt that in many cases the period of retention is too long.

The Question of Specifications.

When tendering for or carrying out a job the builder turns to the specifications for guidance on the nature of the work and materials required. If those specifications are explicit and up-to-date, they are of very real assistance to him, both in the compilation of his tender and the execution of the work. It sometimes happens, however, that ambiguous and obsolete clauses find their way into the specifications, with results most unsatisfactory to all concerned, and especially does this apply to clauses dealing with the description of timber.

Timber Specification.

Take, for example, the clause often met with in present-day specifications which directs that "the timber shall be of the best middling Memel, Dantzic or Riga fir," etc. Here we have a clause which, for reasons I will give later, is hopelessly out-of-date.

If a builder when estimating for a job calls at the architect's office for the purpose of inspecting drawings and clearing up any points that have cropped up on his perusal of quantities, etc., makes enquiry as to what is intended as "best middling Memel, Dantzic," etc., the usual explanation is that the intention is to specify the use of the timber known locally as red deal, this being the timber most extensively used in good-quality building work for both carpentry and joinery.

Red deal, also known as red fir, Scotch fir, and Baltic fir, and commonly called yellow deal in the South of England, is, to be exact, neither a deal nor a fir, but is the wood of a pine tree (*Pinus sylvestris*) which is found principally in Russia, Sweden, Norway, and Germany. There is also a relatively small quantity grown in the United Kingdom.

At one time, say, up to twenty-five or thirty years ago, enormous quantities of red deal were imported into this country from Memel, Dantzic, and Riga, generally in the form of roughly squared logs of large dimensions. The best of these—known as "best middling Memel, Dantzic, or Riga," were invariably of well-grown and mature timber, clean, sound, of beautiful texture, and excellent in every way. These logs were often cut up and converted by the builder, each log being dealt with on its merits, and when a builder took care to hold a sufficient stock of logs, it was very rarely indeed he had trouble over the question of sap or other defects.

In country districts, most of the conversion of logs was by means of pit-sawing, and very earnest indeed were the discussions and consultations which sometimes took place between the builder, his foreman, and the ton Sawyer as to the best method of converting some exceptional log. For the last twenty-five or thirty years, however, the imports from East Prussia, either through the depletion of the available and

accessible forests, the action of the Government, or the competition of Russia and Scandinavia, have steadily decreased, with the result that at the present time, with the exception of a few small consignments, generally inferior in quality and size, Memel and Dantzic fir timber may for all practical purposes be considered as unobtainable, so that to-day for our supplies of red deal we have to look to Russia (including Finland), Sweden, and Norway. So far as the last-named country is concerned, the lack of a reasonable proportion of good-sized mature trees prevents her supplying sawn timber of the size and quality required in good-class contract work, the principal Norwegian timber exports taking the form of battens, scantlings, planed goods, poles, rickers, etc. The red deal from the Riga district, being mostly coarse and of inferior texture, cannot, generally speaking, be considered suitable for good-class work.

Speaking broadly, red deal can be divided into the following groups: Timber from the Archangel district is mild in texture, sound, free-working, and in the best qualities is eminently suitable for joinery and mouldings of the highest class, while the lower qualities yield really good carcassing timber. From the Petrograd district the timber is large and of a stronger and tougher nature than Archangel. It is very durable, and is suitable in every way for carpentry and outside work of all kinds. In the higher qualities it is, if properly seasoned, a good joiners' wood. From Sweden is obtained in the higher qualities some exceedingly good joiners' deals, sound, very free from knots, of good uniform texture, but with rather more sap than the best Archangel shipments, while the lower qualities provide us with sound, good carpentry deals. From Finland a large amount of the timber exported is of smallish dimensions and medium quality, but there are of course exceptions, as in the case of the Kemi district, at the northern end of the Gulf of Bothnia, whence we receive an exceedingly good carcassing deal, sound, bright, and dense. Again, in the Bjorneborg district there are shippers who, by reason of careful selection and grading, have succeeded in exporting timber of the very best quality, the higher grades being really good joiners' deals, and the lower ones good sound carcassing wood.

Siberian redwood is now coming into the market, but of this I prefer not to express too decided an opinion without further acquaintance. From what I have seen of this timber, it would appear that the vast forests of this district will prove an excellent source of supply for many years to come, provided they are systematically exploited. In practice it will be found that no one district has a monopoly of any particular quality or characteristic; also, that any shipment is liable to vary greatly in quality, etc., from time to time, so that a builder needs to keep a very sharp look-out if he is to be accurately posted and up-to-date in his information.

Developments in Saw-milling.

Great changes have taken place during the last twenty-five or thirty years, but perhaps the one which most generally affects the building timbers used in this country is the rapid development of the saw-milling industry in the exporting countries; as a result of which practically the whole of the red deal for builders' use is imported in the form of deals, battens, scantlings, boards or strips, instead of logs as heretofore. These range in size from $\frac{1}{2}$ in. by 1 in. up to 4 in. by 12 in., but there is comparatively little of the latter dimension avail-

able. Now it should be possible to obtain within the range of these two dimensions practically any size of timber that can be required for carcassing work, and if it happens that objection be taken to the smaller sizes of scantlings on the ground that they are not of mature wood, it is very easy to select a batten or deal size that with one or more flat cuts will yield two or more pieces of the required dimensions and without waste. For instance, suppose there is an objection to 2 by 3 as imported; then a 2 in. by 6 in. or a 3 in. by 4 in. cut down the centre will yield two scantlings of 2 by 3, and so on. It may be, however, that an architect considers it desirable to specify that certain of his carcassing timbers shall be of special dimensions, such as, say, 2½ in. by 6½ in., with 2¾ in. by 6½ in. for trimmers, etc.

Now, so long as he clearly understands that the use of these dimensions means that 2½ in. by 6½ in. will cost the same as 2½ in. by 7 in., and 2¾ in. by 6½ in. the same as 3 in. by 7 in., plus the cost of labour and sawing in each case, then no one has cause for complaint; always provided that the specifications and the bills of quantities clearly instruct the builder as to the exact dimensions of the various sections of timber required, together with the quantity of each dimension. Perhaps the best method of doing this is the one adopted in certain districts where the quantities of the timber required for carcassing, etc., are given in cubic feet; lintels, floors, roofs, ceilings, partitions, etc., being kept separate; the whole being accompanied by a specified schedule, giving in detail the dimensions of the different sections and the quantity in lineal feet of each section.

Seeing that for all practical purposes the largest size of sawn red deal imported is 4 in. by 11 in., with a very limited supply of 4 in. by 12 in., though a certain amount of Quebec red pine (*Pinus resinosa*) is imported in 5 in. and 6 in. fitches, and generally used and passed without comment, it may be asked what is to be done when timber of larger size is required?

If expense is no object, and red deal is specially desired, then the builder will have to look round and purchase such special logs as he is able to obtain, and convert them as required. But suppose expense is a consideration, then it will be found necessary to fall back on some other timber as a substitute, such as Quebec red pine, pitch pine, Oregon pine, British Columbian pine.

(To be concluded.)

R.I.B.A. WAR RECORD.

At the Royal Institute of British Architects a record is being kept of the names of all members of the architectural profession who have joined the military or naval forces of the Crown for the period of the war. The list includes practising architects, their assistants, and pupils, and architectural teachers and students, whether attached or not to the R.I.B.A. or other architectural body. So far some 2,100 names have been entered on the Record, but lately, in spite of the recent boom in recruiting, very few names have been received other than those of members of the Institute. The co-operation of members and non-members is specially invited in order to make the Record known and to bring about its completeness. Names, with rank and regiment, where possible, should be sent to the Editor, Journal R.I.B.A., 9, Conduit Street, London, W.

A DELLA ROBBIA FRIEZE.

The external frieze of the façade of the Ospedale del Ceppo at Pistoja, of which a detail is shown on page 55, is a remarkable example of glazed and coloured terra-cotta sculpture. It occupied Giovanni Della Robbia off and on from 1407 to 1529. The subject, "The Seven Most Excellent Works of Mercy," is as suitable as can be conceived for its purpose, and the working out of the idea gives us a most interesting record of dress, habits, and appointments of the period. Very noticeable in the panels is the lavish use of yellow—apparently Giovanni's favourite colour. The faces are doubtless portraits, the modelling of the nude is excellent, but the whole effect is rather hard; we miss Luca's wise restraint and Andrea's delicate blendings. The glaze, too, is rather lack-lustre, and the joints in the composition are, in places, loose and inexact. The statues which connect the panels are placed under well-designed canopies, marking the "potter's" skill or a builder-architect's.

CLASSIC ARCHITECTURE IN RUSSIA.

The February issue of the "Architectural Review" contains the second part of the very notable series of articles on "Classic Architecture in Russia," by Mr. A. E. Richardson, F.R.I.B.A. These articles are the first of their kind ever printed in English, and they reveal a phase of Russian architecture which, it may fairly be said, was never before realised by architects in this country. The illustrations to the article include some magnificent buildings in the Classical

style, among them, especially, at Petrograd, the Alexander III. Museum (formerly the palace of the Grand Duke Michael) by Rossi, the marble pavilion at Tsarsko-selo by Cameron, the Palace of Peterhof by Quarenghi, the Taurida Palace by Staroff and the Palace of the Fine Arts by Vallin de Lamoignon; and, at Moscow, the Grand Theatre and the Roumiantsoff Museum both buildings of the first rank. We reproduce here the view of the ballroom in the Taurida Palace, in which building the Duma is now housed. This palace was built between the years 1780 and 1783. In this period the able Potemkin was in high favour with Catherine II., and as a mark of the esteem in which the Empress held his ability she presented him with a new palace. The plan is vast, yet of great simplicity in arrangement. On the main axis is placed a square hall, with ample circulation to the lateral apartments; beyond the hall is a rotunda, lit from the windows of a graceful cupola which dominates the whole range of buildings; and opening out of the rotunda is the finest feature of the interior—the ballroom, 280 ft. by 78 ft., entered through a double range of Ionic columns with a winter garden adjoining.

The February issue of the "Review" also contains an authoritative and finely illustrated article on Longhena's buildings in Venice, by Mr. Martin Shaw Briggs; a further instalment of Mr. Francis's article on Renaissance steeples in London—St. Giles-in-the-Fields, St. Leonard's, Shoreditch, St. Botolph's, Bishopsgate, St. Anne's Soho, and Christ Church, Spitalfields being dealt with; an article on the Alma Tadema Memorial Library at South Kensington, by Mr. Gerald C. Horsley; and a most interesting discussion of "Some Considerations of Gothic Architecture," by Mr. H. H. Statham.



TAURIDA PALACE, PETROGRAD: VIEW IN BALLROOM.
STAROFF, ARCHITECT (1783).

LEGAL.

Engineering and Building Contract.*Wellman, Seaver, and Head v. Skinningrove Iron Company.*

February 2. Official Referee's Court. Before Mr. E. Pollock.

The hearing was continued of the action in which Messrs. Wellman, Seaver, Head, and Co., of Victoria Street, Westminster, sought to recover from the Skinningrove Iron Company £19,000, balance of a charge of £80,313 for erecting two steel furnaces at their Skinningrove Works near Middlesbrough.

Mr. Soward, the plaintiffs' engineer, in cross-examination by Mr. Lailey, K.C., said that the bulging of the third binder was not caused by any initial weakness before the trouble occurred; but whether that was so or not, the additional weight claimed for by plaintiffs added to the strength of the binders. It was not usual for the Wellman furnaces to have a greater tilt than 20 deg., as was proposed by defendants in this case. It was true that Mr. Head had, in a paper read at the Iron and Steel Institute in 1899, said that a greater tilt than 20 deg. was necessary for drawing off the slag from the furnaces, but since that time great improvements had been made in the construction of rolling furnaces, which lessened the angle of tilt necessary. Dealing with the details of the requirements of the defendants, which was stated had added to the cost of construction, witness said that some were reasonable and proper for the purpose of securing a good working result. At the same time, however, they added to the weight and the cost of the job. The defendants had insisted upon having box girders where the heat was not sufficient to warp ordinary girders, and in this they were asking, he thought, for that which was quite unnecessary, while it added to the cost.

In re-examination by Mr. Colefax, K.C., witness detailed a number of instances in which alterations were made in the original plans, by direction of the defendants, which had added to the cost. He said that there was no idea of duplicating the Talbot furnace, and it would not have been possible to do so having regard to the specifications and the contract drawings. The plaintiffs were not prepared to give the defendants substantial alterations involving increased cost to them, and they were entitled under the new contract to be paid for all extra weight beyond 329 tons. They had not, however, charged for all the excess weight. The alteration in the angle of tilt and in the capacity of the furnaces increased the weight.

The evidence of this witness, which was brought to a close on Tuesday, occupied six and a half days.

Mr. Frederick Isador Sanderson, a director of the plaintiff company, who had acted as secretary since its registration, gave evidence as to the correspondence out of which the contract grew, and stated that plaintiffs' account, as presented in the case, was made up by him. He also explained in detail how the several items were arrived at and the amounts paid to sub-contractors in respect of work done for the defendants.

Mr. Herbert Stonewall Jackson, works manager for Messrs. Richards and Westgarth, said that he had built thirty-four furnaces for his employers, who sub-contracted for a considerable portion of the work at Skinningrove. In contracting for

the work, he treated the furnaces as 60-ton furnaces. They could not have been constructed according to the plans at 329 tons each. Furnaces constructed according to the original designs and specifications would have been proper working furnaces for the manufacture of steel. Many of the defendants' requirements he regarded as quite unnecessary. With an angle of tilt of 20 deg., it was not necessary to have a swinging platform. A fixed platform would have worked satisfactorily, and, according to the drawings, he thought an angle of 20 deg. would have been sufficient.

With the evidence of this witness, the plaintiffs' case closed and the hearing was adjourned.

WHAT IS GOTHIC?

The following letter from Sir T. G. Jackson, R.A., has appeared in "The Times" in answer to a criticism of his book on Gothic architecture:

Mr. Mackmurdo in your last number says that so far from the French portal being, as I imagine, developed from the system of subordination of orders in "Gothic" architecture, it was the portal itself that created that system. This is indeed a surprising discovery which upsets all one knows of the history of the style.

The subordination of orders, by building arches in receding rings one within another, was a device of the men of the Early Romanesque Renaissance to do with little stones and poor tackle what the Romans, whom they aspired to imitate, had done with huge stones and adequate appliances. It came of poverty and want of means, not, as Mr. Mackmurdo supposes, of the desire to splay doorways more widely. For many early doorways, like those at Le Mans and Caen, are hardly splayed at all, and others, like those at Barfreston and Ely, have at most only one outer order, while in the interior we find receding orders in the nave arcades, in order to economise material, and to get easy fixing, by using small stones that a man might carry up on his back without much tackling or machinery, of which the builders at that time had little enough.

This was the true origin of the subordination of orders; it was a device to meet a constructional difficulty. But no sooner was it invented than it was welcomed as an artistic suggestion. The plain orders were elaborated, moulded, enriched with sculpture, and multiplied, till we get at last among other developments the great French portal itself.

OBITUARY.*Mr. C. B. King.*

Mr. Charles Bean King, of Frognaal, Hampstead, head of C. B. King, Ltd., builders, who died on October 7, aged eighty, left property of the value of £32,433.

Mr. W. F. Saville.

Mr. W. J. Saville was a director and manager of Messrs. Foster and Dicksee, builders, who have fulfilled many large contracts in London and the provinces. Entering the employment of the firm as a junior clerk, Mr. Saville rose to the position of manager. He had been chairman of the Rugby Masters Builders' Association and of the Rugby Building Society.

NEWS ITEMS.*Waterproofing a Palace.*

The engineer for the new Ameer's palace now being built in Afghanistan has used "Pudlo" for waterproofing the cement work. The makers inform us that this is only one of the many contracts abroad where their waterproofer has been successfully employed.

Dublin Housing Loans.

Three Dublin housing loans have recently been sanctioned by the Local Government Board, viz.: £3,341 for the acquisition of the McCaffrey estate area; £15,750 for the acquisition of the Fairbrothers' Field area (these were recommended to the Board of Works on December 16 last), and £7,100 for the acquisition of the Spitalfields area.

Buildings in the War Zone.

At the Royal Society of Arts, John Street, Adelphi, London, W.C., three Fothergill lectures on "National and Historic Buildings in the War Zone: their Beauty and their Ruin" are being delivered by the Rev. George Herbert West, D.D., A.R.I.B.A. The first was given on Monday, February 7; the remaining two will be given on February 14 and 21 at 4.30 p.m.

Protest Against L.C.C.'s Proposed "Economy" in Education.

The proposal of the London County Council Education Committee to save £360,000 on the estimated expenditure for this year was discussed at a meeting of more than 500 delegates from London branches of the Workers' Educational Association and from over 200 organisations in the L.C.C. area at the Memorial Hall, Farringdon Street, London, E.C. The Rev. William Temple, who presided, said their primary concern must be to express so definite an opinion on the subject that public bodies should know that if they were to represent the people, they must put education in the forefront. They must do whatever lay in their power to prevent the war from being used as an occasion for whittling away that small amount of education which years of struggle had secured for the people. A resolution was carried, with one or two dissentients, declaring that the policy of "educational" reaction adopted by the London County Council was opposed to the true interests of the workers and the nation as a whole, and calling on the Workers' Educational Association to work continually for the improvement of the educational services of the County of London.

First Garden City Report.

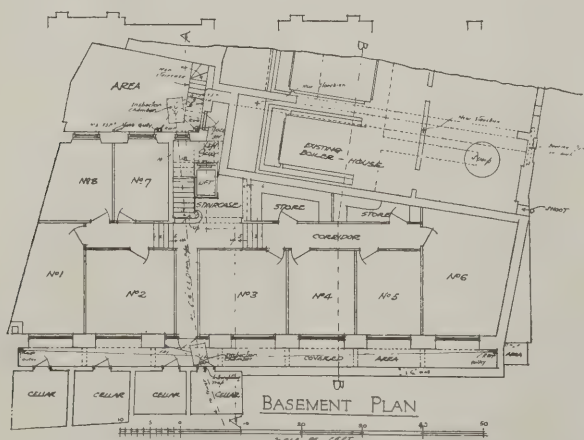
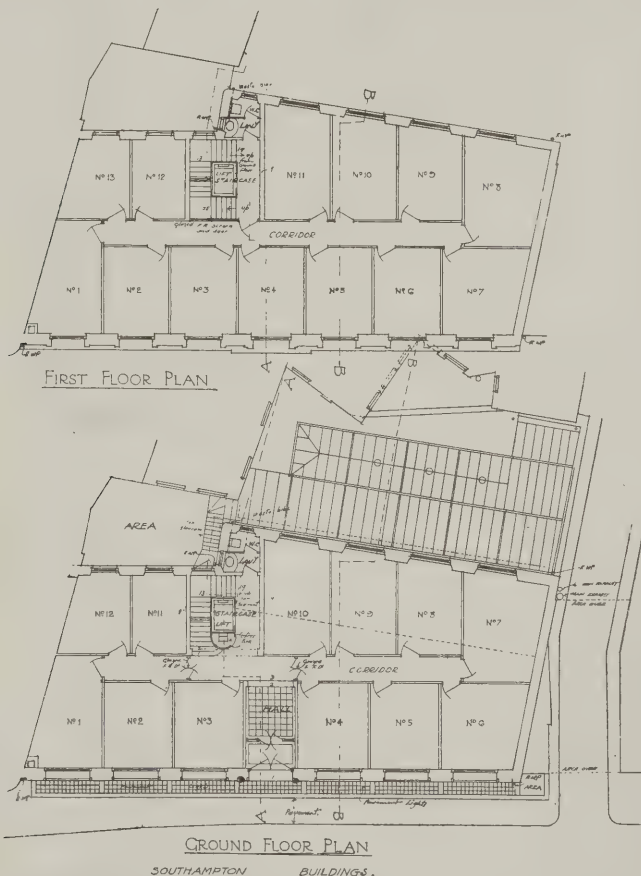
The annual report of the First Garden City, Ltd., gives evidence of considerable progress in the past twelve months. The industries of Letchworth were never busier, and this prosperity is by no means confined to temporary munition work. Last February a combination of two important Belgian engineering industries was attracted to the town, and by June were at work in three large and permanent buildings, and are now employing 1,200 men. The present population of the city is approaching 12,000, and although 3,000 are Belgians there is every likelihood that there will be a demand for houses for some time to come. Some hundreds of new cottages have been erected by various housing societies and by the Hitchin District Council. The necessary Government loans

towards this work were only granted after close inquiry into the urgent need for them. The accounts show that the net profit for the year was £5,823, an increase of £2,621 over the preceding year. In normal times a dividend would have been recommended, but it is considered prudent to carry the profit forward and use it in the business.

Decoration of London County Council Schools.

On this subject certain members of the L.C.C. Education Committee have conferred with the undermentioned artists representing the Professional Classes War Relief Council: Mr. W. R. Colton, A.R.A., Mr. John Hassall, R.I., Mr. M. Spielmann, Sir Aston Webb, K.C.V.O., C.B., R.A. Eight schools, situated in poor

districts, were selected by the committee, and the representatives of the War Relief Council, after visiting several of the schools with a view to deciding which, in their opinion, would be best suited for their purposes, have recommended the first floor (boys') hall of the Devon's Road School (Bow and Bromley) in which to carry out their first scheme of decoration. They have submitted in outline an "Empire" scheme of decoration illustrating life and industry in the British Dominions beyond the seas, which the committee consider should be approved. Steps will be taken by the War Relief Council to proceed with the preparation of the scheme, and it is proposed, in due course, to ask the chairman of the Council to unveil the work and to receive the presentation.



HAZLITT HOUSE, SOUTHAMPTON BUILDINGS, LONDON.

(See page 59.)

A BUSINESS "COMING-OF-AGE"

At the Holborn Restaurant on Friday January 28, Messrs. E. Pollard and Co. the well-known firm of shop-fitters, celebrated their twenty-first anniversary. Mr. Edward Pollard, chairman of the company, proposed the toast of the evening. Tracing the growth of the business, he said that, whereas in the first year the average of wages paid was £15 per week and in the next year (1896) had advanced to £25, during last year, 1915, the weekly wage bill stood well over £2,000. The principal landmarks in the life of the firm were the start in Kingsland Road in 1895, the occupation of the factory in Hag Street, Bethnal Green, in 1899, the removal to 29, Clerkenwell Road in 1901, and the building of the huge new factory in St. John's Square and the conversion of the business into a limited company in 1912. Continuing, Mr. Pollard said he had often received enquiries, both written and oral, asking for information as to what he attributed his great success in business. He was diffident of putting his thoughts on this subject into words, but if it would help others he would say that success depended upon many things, but mainly upon hard work in the early days. Much of the progress of the firm should be attributed to the advice and sympathy he had received from Mrs. Pollard, whose comradeship he referred to in terms of affectionate appreciation. But the most important reason was the help received from the clever band of men and women he had gathered round him. In this connection he mentioned the chief helpers, recounting briefly their rise in the firm. He said the personal qualities of a business man accounted for the greater part of business success. To work in a friendly spirit and to find happiness in work was the only thing worth working for, and he had found that nothing else paid so well.

Mr. H. N. Barnes, responding to the toast, said it was a wrong idea that men built businesses; businesses built themselves, if the proprietors only gave the sufficient scope and elbow room. When their firm was small it was only because the factories were small. It was not want of work, nor want of ability, but want of accommodation. There were about 800,000 shopkeepers in the country, and each year the firm dealt with about 1 every 2,000. There was a great deal of shop-fitting to be done for the remainder of 1,000, and the way to get this work was to be in a position to do it well. Work was not always a question of money: the satisfaction of good work was a great reward in itself.

Mr. C. J. Pollard proposed the toast "The Directors." He said the firm was fortunate in having directors who really did direct, in contrast to some directors who were little more than figureheads and burdens on businesses. He regarded the rise of the firm as a business romance, and thought that Carlyle must have had in his mind just such men when he spoke of captains of industry.

Mr. R. Thomson and Mr. E. W. Elsbury responded on behalf of the directors. Mr. Elsbury remarked that Pollard's was regarded as the training ground for the best men in the shop-fitting trade. It was said that if a man were capable Pollard was the place for him to do well at. He was proud of his association with the firm and prouder still of his long and intimate association with Mr. Pollard.

Other speeches closed a very pleasant evening.

THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, February 16, 1916.

Volume XLIII. No. 1102.



PANEL OF THE SINGING-LOFT FROM THE DUOMO, FLORENCE, BY LUCA DELLA ROBBIA.

(See page 71).

THE ARCHITECTS' & BUILDERS' JOURNAL.

FEBRUARY 16, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1102.

EDITORIAL.

AS our readers are aware, the Port and Transit Executive Committee of the Board of Trade, in order to relieve the shortage in tonnage, proposes the restriction or prohibition of certain imports. Pulp and paper for newspapers are among the articles named in this connection, and, as a consequence, paper will need to be used with strict economy. We would therefore point out to readers that those who buy their Journal in a casual or haphazard way, now at one bookstall, then at another, without giving the matter a thought, causing a considerable amount of wastage of labour and material—of labour in excess of production over consumption, and in the backward and forward conveyance of copies that may happen not to be required at a given shop, or of sending for further copies where the casual demand is in excess; and of material mainly because an endeavour to meet the convenience or the vagaries of the casual purchaser necessitates what may be called the flotation of many copies in excess of the number actually purchased. Casual purchase acts also uneconomically in another way; whilst one newsvendor may have copies left on his hands, because the casual purchaser disappoints him, another agent to whom the casual purchasers happen to come in unusual numbers sells out, to the disappointment of further casual customers; and thus sales are lost. At present, all newspapers suffer from these causes; and the consequent waste must amount to an enormous annual total. To minimise it would be to effect the saving of a very considerable item of national waste. We confidently appeal to our readers to assist us in the endeavour to reduce this waste, which can be very easily avoided. Put briefly, what we ask is, that those who have formed the habit of buying the Journal casually and from various agents will make a point of ordering it to be supplied regularly from one source. If this practice were generally adopted with regard to all periodicals, the resultant economy would amount, in the annual aggregate, to a national saving of many thousands of pounds.

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It is a startling proposition, perhaps, but would seem to be well founded, that urban councils have lucid intervals. Stowmarket has the honour of supplying an instance. At a meeting of the council, it was reported that a certain firm of contractors "had defied the council and had deviated from the plans." In normal times the first of these offences would have been held worthy of *peine forte et dure*, and the combination would have suggested arraignment for high treason. But the war seems to have brought about a rectification of spirit and a revision of ethical values. On urban councils it has had the benign effect of Mr. Wells's comet, which, if we

remember rightly, invested the world with an atmosphere of sweet reasonableness. Stowmarket ignored the alleged "defiance," and admitted that the deviation was all to the good. One member said that the buildings in question were most satisfactory; another advanced the completely novel theory that "by-laws need not be carried out in a hard-and-fast manner"; yet another advanced the equally daring doctrine (which before the war would have been regarded as heretical and impious) "that it would be senseless to pull down a building with which they were satisfied." Which is all very pretty to see. Nevertheless, we would venture to throw out the hint that there may still be nooks and corners of the kingdom to which the dulcifying influences of Mr. Wells's comet may not yet have penetrated, and where, therefore, "defiance" and deviation are not yet quoted at a premium, and where the inconvenient question raised by one of the Stowmarket councillors—"What is the use of by-laws?" might receive an old-fashioned answer.

* * * *

Mr. Pember Reeves, in the opening lecture of a series of six which he is delivering on "The Near East and its Problems," at the London School of Economics, of which he is director, eulogised the Byzantine Empire and all its works. "Its legal system was the very highest—the old Roman law codified and re-codified—and still the admiration of modern jurists. Merchant, contractor, and property owner could rely upon obtaining complete justice in the Byzantine courts; whilst it was the best centre for trade in the world." More could hardly be claimed for Arcadia, Utopia, or Erewhon. But more follows for Byzantium: "Its architecture was superb, the space, life, and dignity of a Byzantine interior being without rival. Upon the material side its engineers were magnificently skilful, the walls of Constantinople being deemed the strongest and most wonderful before the days of gunpowder and artillery." Eliminating the engineer and the undefined but easily understood effects of villainous saltpetre, one has to think intently upon the glories of Hagia Sophia in order to curb the feeling that this eulogium is pitched in rather too high a key; for it has been truly said that the majority of Byzantine buildings were small in scale and timid in construction, and never carried to their logical conclusion the great principles exhibited in the early masterpieces.

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For architects, of course, the chief point about Byzantine is the revolution in structural design effected by the invention, or at all events the extended use, of the dome on pendentives. Although the style endured for a thousand years—from the fifth to the fifteenth century—it never fulfilled the promise of its early masterpieces, and we are

perhaps disqualified for a whole-hearted admiration of even its most beautiful relics by their appeal to the Eastern rather than to the Western feeling. Hence while Santa Sophia as an Eastern gem in an Oriental environment may get a thorough grip of us, Bentley's cathedral must always leave us comparatively cold if only because Westminster is not Constantinople. There is also the disturbing feeling that the style is, in a sense, embryonic—or, rather, transitional—since Romanesque, Gothic, and the Moslem modes are, in a way, developments of it. Greeks from Asia Minor were, it is thought, the chief architects of the Byzantine Empire; and their work, combining Roman traditions of structure and decoration with the artistic influences of Assyria and Persia, is decidedly eclectic, not to say hybrid. Mere resuscitation of it is apt to be as futile and spiritless as the "Gothic revival." The disqualification, however, hardly applies to its manifestations in Russia, where its vitality is preserved in a genuine adaptation of its forms to the sympathetic temperament of the people.

* * * *

A point of considerable interest to estate owners, and having an oblique reference to town-planning, was raised and determined in the case of *His Majesty's Postmaster-General v. Hutchings*, which came before the Railway and Canal Commission Court on February 7. It appeared that on the Sutton estate at Seaford, owned by Mr. Hutchings, certain roads had been dedicated to the public, but were not yet built upon, and had not been taken over by the local authority. As a side issue, the question was raised whether these could be considered as public roads. A county court judge had held that they were, and this view was upheld. Nevertheless, Mr. Justice Lush said that as the roads had not been taken over by the local authority, the respondent was still their owner, and was the person who could give or refuse assent to the placing of poles on them under the Telegraph Act, 1878. He was willing, it seems, to grant the use of the roads for this purpose, but both he and the Postmaster-General were dissatisfied with the award of the county court judge that respondent should be paid an annual rent of £5, the latter contending that any imposition of rent was contrary to the intention of the Act, and the former that the rent was not enough. It was held that the imposition of rent was improper, and must be annulled. Thus was determined the principal point in the dispute, and in the course of the arguments it was made very clear that while the owner of a road may not charge rent against the Post Office authorities, he can recover from them compensation for actual loss or damage caused by the presence of the wires. Counsel for the Post Office threw out the promise "that, in view of the high character of the houses on the estate, care would be taken to make the poles as little unsightly as possible;" which was a tacit admission that such poles are at best more or less unlovely to look upon. They and their wires, however, must, we suppose, continue to disfigure the landscape until "wireless" becomes perfect and universal.

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Mr. Arnold Bennett is by way of qualifying as a very respectable publicist. Writing at regular intervals in the "Daily News," he treats in pointed and popular style topics that the public, to their undoing, sedulously avoid when the writer is not a known novelist or playwright, who is at least sure to have something interesting to say, and to express himself in a simple and reasonable style. Mr. Bennett, we are glad to see, is, like Mr. H. G. Wells, making a strong endeavour to awaken the public conscience with respect to education. If with this object both gentlemen are somewhat noisy and insistent, they are thereby the more effective.

"Our dependence on Germany," Mr. Bennett writes, "humiliatingly continues to this hour. And it is chiefly due to our gorgeous indifference to technical education, to our deep horror of the scientific. The technical expert has of late years, thanks in the main to the northern universities, conquered some of our barbaric prejudice against him; but the prejudice is still terrific, and the instinctive contempt is still terrific." Those northern universities—Manchester, Liverpool, Leeds, and Sheffield—he says, "represent the advanced movement in education to-day. They are our hope. But extremely few people realise what they have done and are doing. They produce chemists, physicists, doctors, dentists, public-health officers, steel experts, all kinds of engineers, architects, colliery managers, all kinds of factory managers, metallurgists, dyers, leather experts, even farmers. They have had an enormous beneficial influence on the processes of manufacture and the organisation of trade concerns. In the present war, apart from supplying a large number of officers, they have rendered direct technical help to the War Office which it might be imprudent to particularise, but which in at least one instance has been absolutely vital to the carrying-on of the war." Our older universities, and the great public schools which feed them, conspire in the production, as Mr. Bennett acknowledges, of a fine type of gentleman, and that is to do the State some service. But "tone" is not everything: and, says Mr. Bennett (and Mr. Wells is in tune with him, though shrilling on a higher note), this socially excellent type of humanity is ineffectual because he has no "scientific conception of the universe."

* * * *

Mr. Bennett seems to think that the "very existence of the Empire" depends, not on our military effort, the success of which he feels to be quite certain, but on a renaissance of education, which would involve the thorough reform of our great public schools and of our older universities. Both Mr. Bennett and Mr. Wells naturally exaggerate the case for reform. Our public schools and our older universities are not exclusively engaged in misinterpreting the ancient classics. Every school has its laboratory and its workshop, and the lists of lectureships and readerships at Oxford, but more particularly those at Cambridge, show that the sciences (exact and inexact, pure and applied) are by no means neglected. That these subjects do not develop more fully and more thoroughly is the fault not of educationists, but of parents and guardians. Mr. Bennett and Mr. Wells must know this very well indeed, and possibly they have considered that a flank attack (on the educational system of the country) is of greater strategic value than a frontal assault on the main position—on the apathy and ignorance of the general public, or, still more directly, on that comparatively small section of it which regards Oxford or Cambridge solely as a place for social advancement, where the authentic polish can be acquired and the "right people" are to be met. Setting aside mere snobbery, we are very far from saying that in rendering those social services a university is not fulfilling a very useful function; and it were as preposterous as profane to destroy the character of our older universities by making them more heterogeneous than they have already become. No sound educationist wants to see them converted into "glorified polytechnics." It is rather their attitude towards practical utility that requires amendment. But the mistake is in supposing this to be the chief function, which should be—and indeed is—the advancement of learning. What is really in question is the character of that learning, and that is a matter about which the carelessness of the comparatively wealthy is a potent influence for evil. Surely we are on the eve of a radical change of view. Already the class or classes who are too apt to think of the university as an aristocratic institution have given the most conclusive proofs of splendid patriotism; and if they can be made to perceive that educational

efficiency is essential to the existence of our Empire, and that the dominating influence of their example largely controls the position, they will rise to a larger conception of education, and help it forward instead of hindering it. In the imminent revision of our educational institutions the architect is vitally interested, and he should keep a close watch on the new movement.

HERE AND THERE.

ARCHITECTURAL literature being in general of rather a formidable character, I am always ready to assimilate anything that is written in a less seriously professional style. An American writer sometimes breaks the monotony, as in the editorial comment of the latest issue of "Architecture," New York. This writer reminds us that in any novel where an artist enters, the words "creation," "inspiration," "mood," must inevitably appear. We read about the painter fumbling over his canvas for days, or sitting humbly in his attic waiting for the "great idea" to come to him: he then dashes it off with inspired hands, the colour scheme invariably correct, and the brushwork rapid and facile. "Artists of all sorts, according to the novelists, and in the popular mind as well, are sternly dominated by the artistic temperament, and can work only when they have a great idea, and can work at their expression of the great idea only when the mood is upon them, generally after eleven o'clock at night. Nor do they work for money: they work to leave a legacy to the future." The American writer is wondering how such an impression got abroad. In the first place, he says, the average artist does not think he has a mission: he knows that he was born with an ability to do certain things which by training he has so developed that they have become commercially valuable. "His inherent ability is not more remarkable than that of the expert accountant, or the natural born salesman, and there is not now living, nor ever was, an artist who was not 'made' as well as born. The artist does not wait for an inspiration; he waits for an order; and when he gets it he has 'creation' and 'inspiration' and 'mood' enough to satisfy any Robert W. Chambers of the lot. . . . And the curious thing about all this working to order that artists do is, that it occasionally results in masterpieces, and that the man who does not work to please the crowd, and does work to please only himself (according to the accepted views of correctness as laid down by the novelist), seldom or never produces anything of either temporary or permanent importance."

Turning to the literary world, the American writer cites the case of the late lamented William Shakespeare, "a prosaic, canny, hard-working, hard-drinking theatrical manager, who had to write his plays because he could not find anybody else to do it for him. There certainly is very little in Shakespeare's work which suggests waiting for an idea; he borrowed or stole, if you like the expression better, the plots of his plays wherever he found them convenient; he was not above lifting the dialogue with the idea, and wrote his plays of a convenient acting length, and handled his matter in a way suited to please the crowds of his time, and to make money for him. Yet it is probably true that Shakespeare is the greatest writer of English who has ever lived, and his reputation rests not upon the lyrical pieces that he 'dashed off' to amuse himself, but upon the great bulk of his plays, which he wrote to please the popular taste." Then our matter-of-fact commentator goes to another field, and mentions Michael Angelo as a craftsman of not dissimilar sort: "Trained as a sculptor, he became a painter to order, and in both fields his greatest successes were upon works which he made to order, as the sculpture upon the Medici Tomb and the frescoed ceiling of the

Sistine Chapel. It is possible that Michael Angelo did a certain amount of work just because he wanted to, but it is certain that the work by which we know him was done to order." As for architecture, we are assured there is no question about men's reputations depending upon the things which they have created to order. "There have been cases where men have thought of a scheme for a monument or for a house or something like that, and have gone around and tried to get somebody interested enough in it to put up the money to build it, but such cases are negligible in the mass of good work done in the usual way. Architects are given an order which is fastened about with harassing limitations; the storey heights are set, lighting and areas are determined for them; materials are often determined for them; cost inevitably enters in the question of design, and it is a curious kind of an architect who, having been given an order, sits down and waits for an inspiration. He pulls up his stool, grabs his T-square and triangle (likewise his scale and pencil), and hammers it out; sometimes he has to hammer pretty hard, and for a very long time, before he can get anything passable. Inspiration is pretty scarce among the architects, and always has been; precedent is a much easier thing to use than inspiration, and it is to precedent that we are indebted for the world's great buildings. . . ."

This is the unadorned tale of the architect in being. But is it really true?—or, at least, is it true of these architects who are doing the best work? Frankly I think it is not. Architects who achieve great results are made of better stuff than the dull grubbing sort of fellow described above. They may be working for a living, but when they get hold of a problem with architectural possibilities in it they do not apply themselves to it like any journeyman doing a piece of routine labour, but bring their whole mind to bear on it, searching for inspiration, for a governing idea, a conception of the entire scheme in hand; having once got that idea (call it "inspiration," "creation," or what you will), they can turn to precedent, in the form of existing works, or illustrations of them, for details of its development. Despite the cynic who said that no man was ever a hero to his valet, and despite art cant and jargon, it is the fact that fine architecture is only possible as the outcome of fine thought—thought on a level far removed from this hack which our American would have us believe is the real architect. And because a man is required to do something "to order," it by no means follows that he will set to work with only half the spirit he would show if he were doing the thing on his own initiative, just for the fun of it. I will not say that this is so with all architects; there are sheep and goats architectural; but certainly it is true of every architect who has an engrossing interest in his work. Why, even the engineer has "inspiration"!

As a sort of *envoi* to Richmond, here is a little picture. Imagine a fairly large manor house; some thirty rudely-built cottages, or rather huts, inhabited by hewers of wood and drawers of water; imagine a long procession of a king and court, heralds and men-at-arms, servitors and pages, threading along the old road through Mortlake and passing these hovels, the owners of which run from the fields, and their wives from their baking on iron plates, to follow it to the manor house; a little braying of horns, a good deal of trouble with the emblazoned banners, and much clanking of accoutrements and arms; and then you have a picture of Richmond—or Sheen, as it was then called—in the days of Edward the Third (1312-1377), when first it became a place of note.

UBIQUE.



MODERN AMERICAN ARCHITECTURE. . XXXIV.—CHILDREN'S HOSPITAL, BOSTON, MASS.
SHEPLEY, RUTAN AND COOLIDGE, ARCHITECTS.

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SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.). XXII. — THORNCROFT MANOR, LEATHERHEAD, SURREY.
SIR ROBERT TAYLOR, ARCHITECT.

LIBRARY
OF THE
UNIVERSITY OF ALBANY



ENGLISH INTERIORS. I. - STAIRCASE OF YORK HOUSE, PALL MALL, LONDON (NOW DEMOLISHED).

BRETtingham, ARCHITECT.

LIBRARY
OF THE
UNIVERSITY OF MICHIGAN

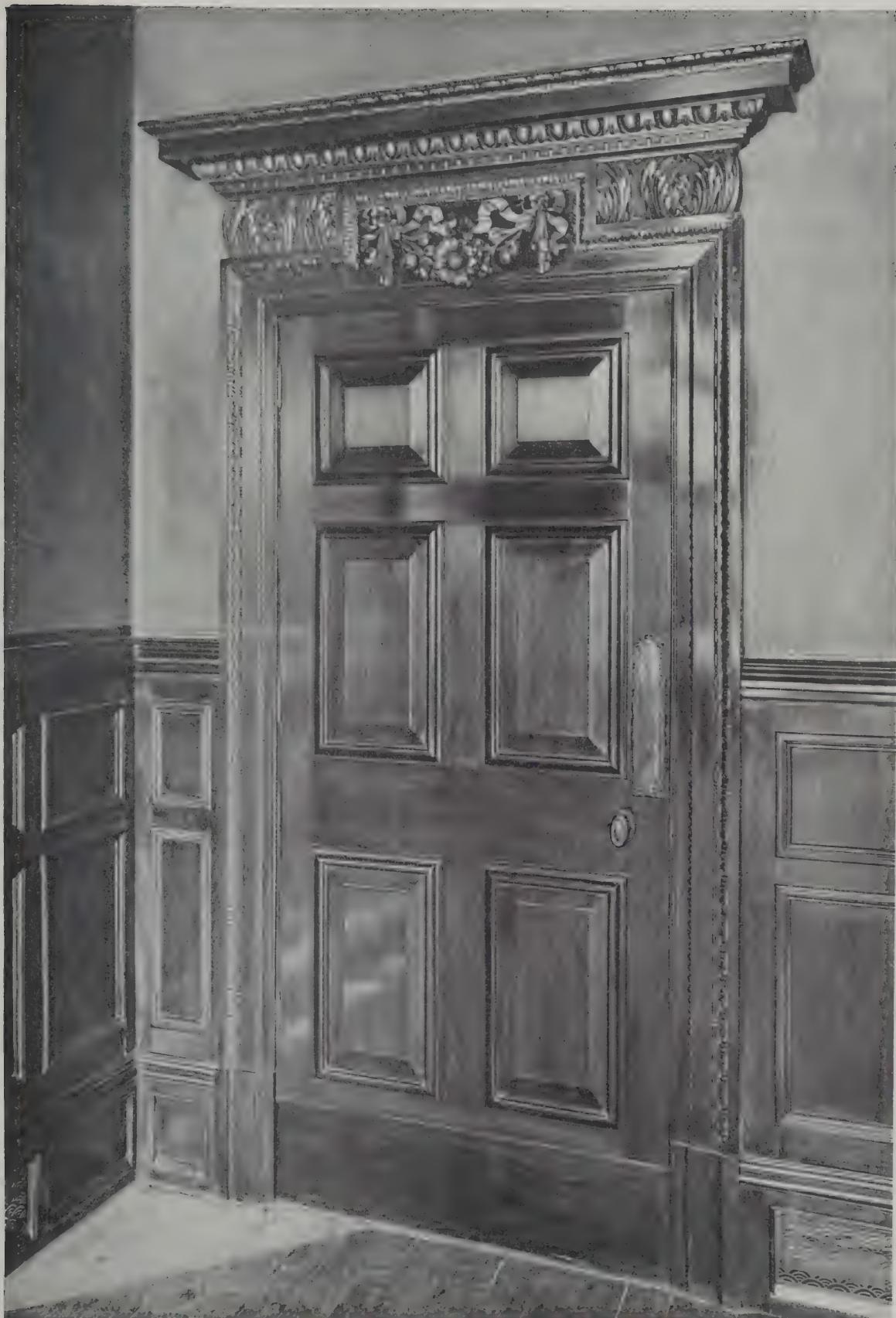


Photo ; Thomas Lewis, Ltd.

MODERN DOMESTIC ARCHITECTURE (SERIES II.). XXX.—SUMMERHILL COURT, KINGSWINFORD: DOORWAY.

JAMES A. SWAN, F.R.I.B.A., ARCHITECT.

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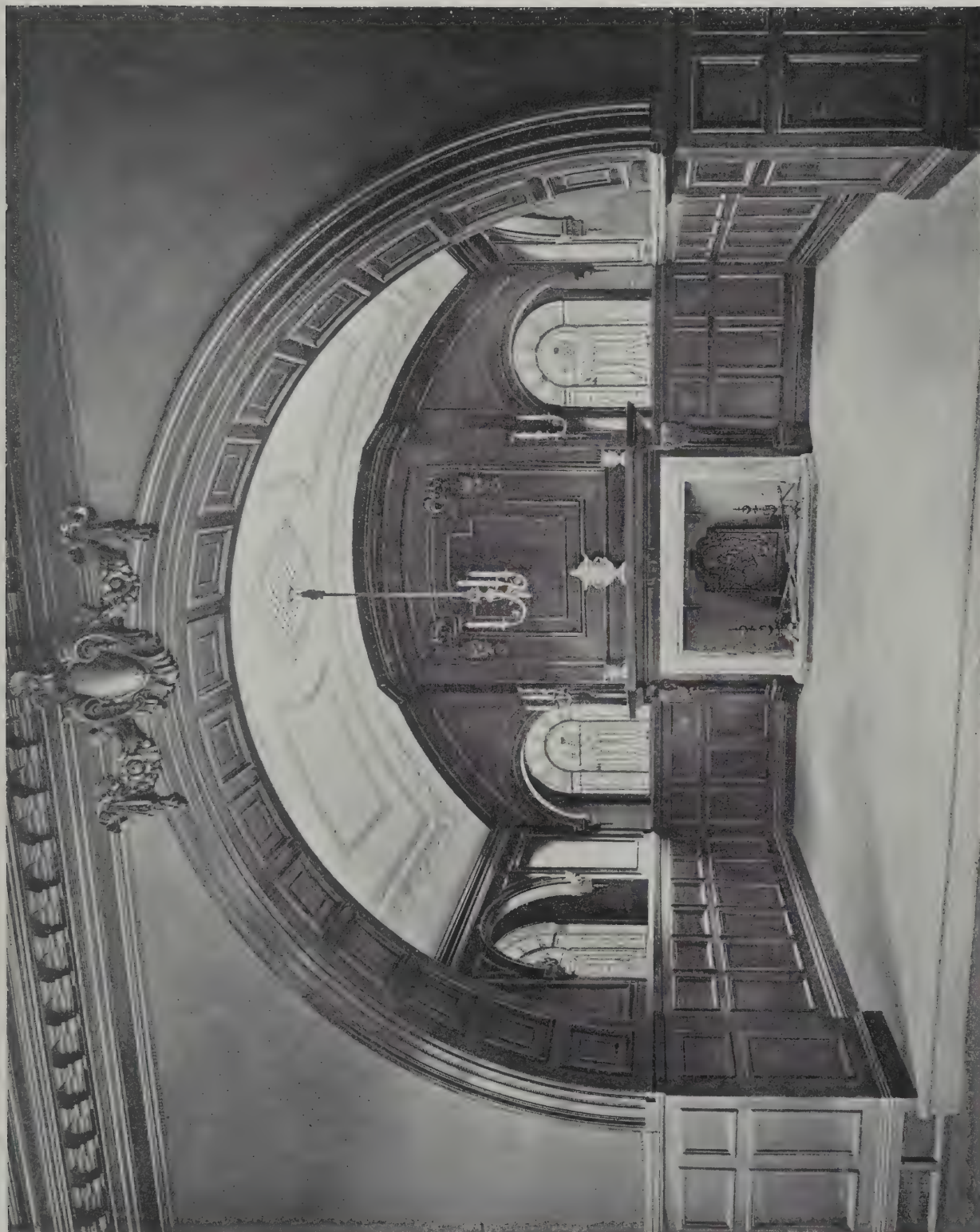


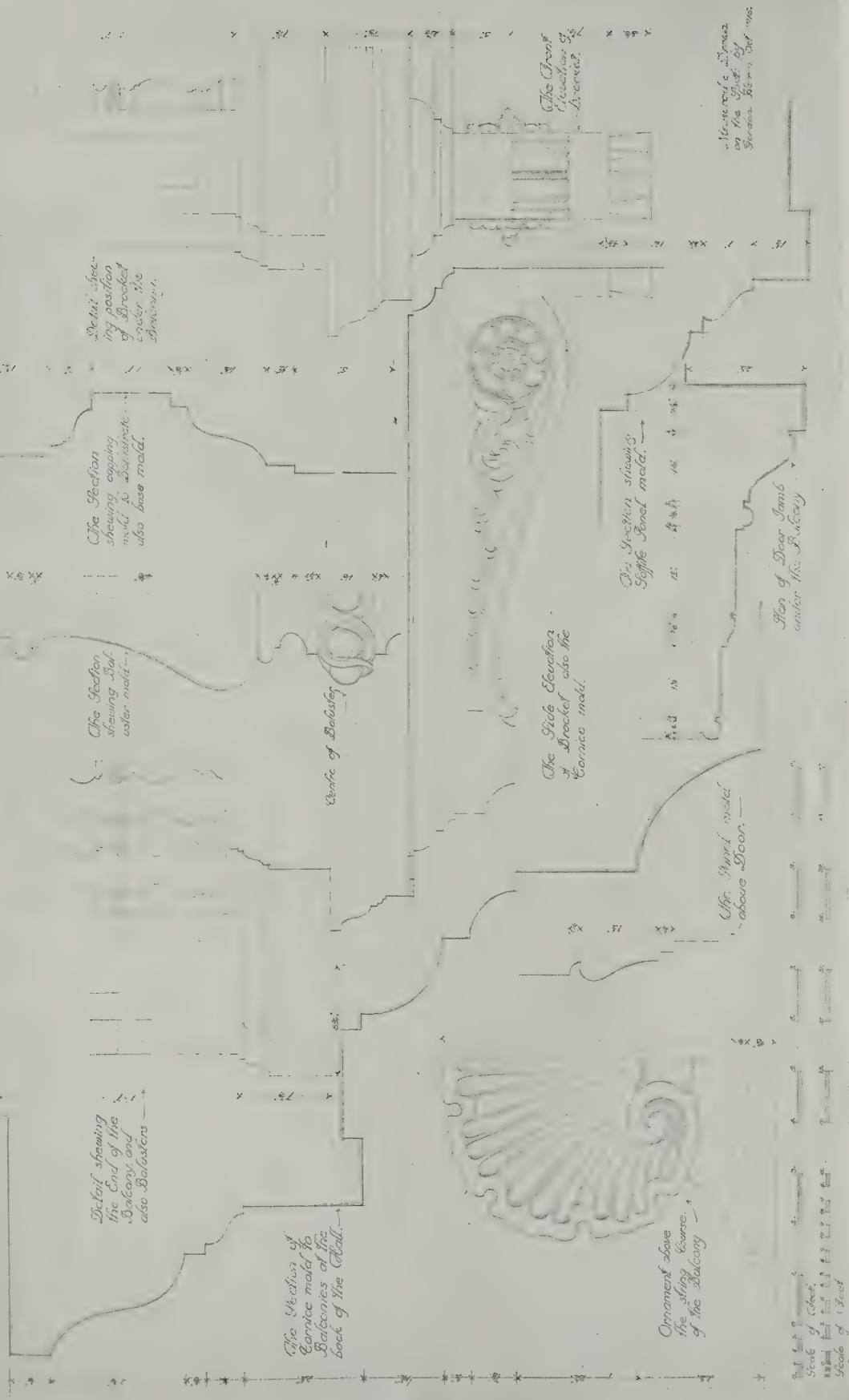
Photo: Thomas Lewis, Ltd.

MODERN DOMESTIC ARCHITECTURE (SERIES II.). XXIX.—SUMMERHILL COURT, KINGSWINFORD.

JAMES A. SWAN, F.R.I.B.A., ARCHITECT.

11-11-11
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Free Trade Hall, Manchester.
Continued Detail of the Balcony.



STUDENTS' DRAWINGS (SERIES II). XII.—FREE TRADE HALL, MANCHESTER: DETAILS OF LARGE HALL.

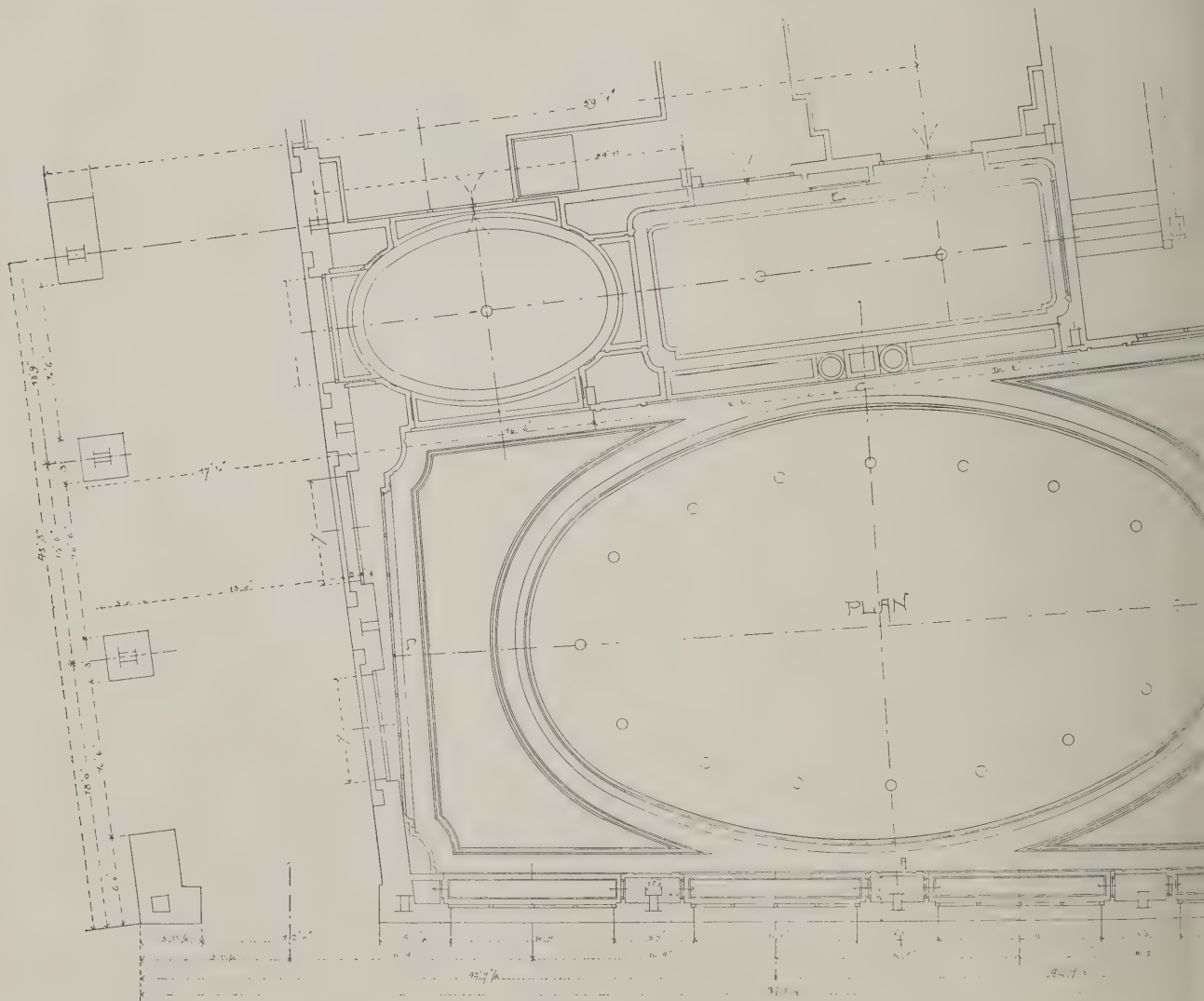
MEASURED AND DRAWN BY GORDON HEMM.

THE UNIVERSITY OF CHICAGO
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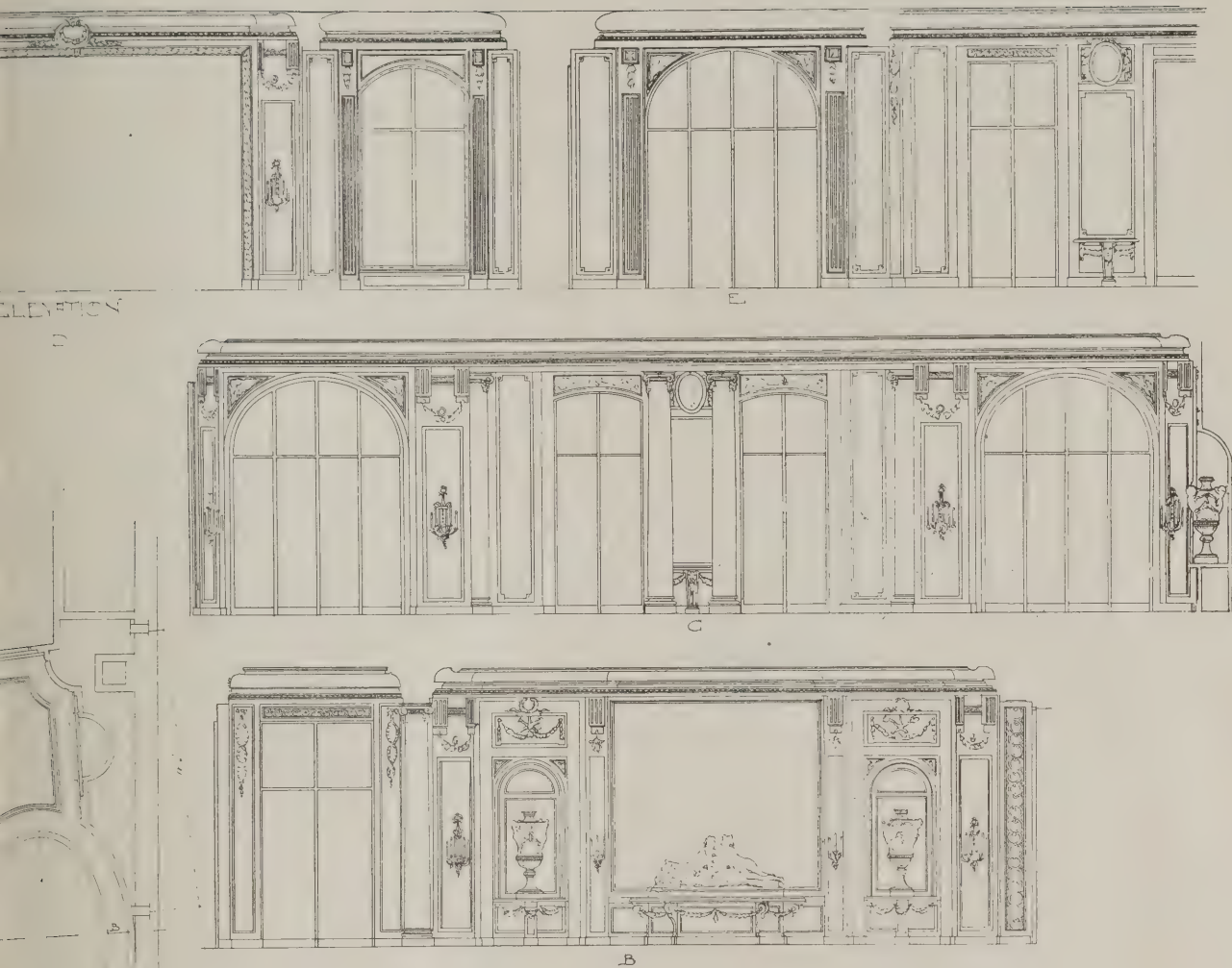
11



ARCHITECTS' WORKING DRAWINGS (SERIES II.)

MEWES AND D

FRAMING N° 134.



-THE RITZ HOTEL-
RESTAURANT

Y.-RITZ HOTEL, LONDON: THE RESTAURANT.
 ARCHITECTS.

LIBRARY OF THE
UNIVERSITY OF ALABAMA

THE PLATES.

Children's Hospital, Boston, Mass.

THE new Children's Hospital at Boston is interesting not only as an architectural composition, but also as a current example of hospital practice in America. The site is, roughly, oblong, the main block (which we illustrate) being at the front, while behind it are ward blocks connected by a corridor, a surgical block, and detached buildings for contagious cases. The plan below shows the arrangement of the principal floor of the main block. Messrs. Shepley, Rutan and Coolidge are the architects.

Thorncroft Manor, Leatherhead.

This house was built in 1772 for Henry Crab Boulton, Esq., from designs by Sir Robert Taylor. A dignified composition is produced out of the simplest elements. The importance of the principal rooms is well expressed by the emphasis given to the windows of the ground floor, and the stone basement serves to provide an appearance of strong support for the stucco of the upper part. Attention is drawn to the delicacy and beauty of the cornice, and to the treatment of the steps leading up to the main entrance.

Staircase Hall at York House, Pall Mall, London.

York House, Pall Mall, the staircase hall of which is shown on our plate, was built for Edward Augustus, Duke of York, brother of King George III., who entered the Royal Navy as a midshipman in June, 1758, and died at Monaco in 1767, while on a cruise in the Mediterranean. A few months before his death the supplemental Volume V. of "Vitruvius Britannicus" was edited by Woolfe and Gandon. The second building illustrated in it is entitled "The Duke of York's Palace

in Pall Mall." It is curious to observe that though the mansion is described as a palace, and though "its situation is very eligible, having from the principal apartments on the south an agreeable and pleasant prospect over St. James's Park and the county of Surry," there is no mention of an architect. This omission is supplied in the plates of the volume, where "Brettingham, Archt." appears. The building, forming part of the Old War Office, was pulled down about eight years ago, but at that time the staircase hall and the principal rooms were still much as they were left by Brettingham. Though of the same delicate character, the style of decoration is not for a moment to be mistaken for that of Adam.

Summerhill Court, Kingswinford.

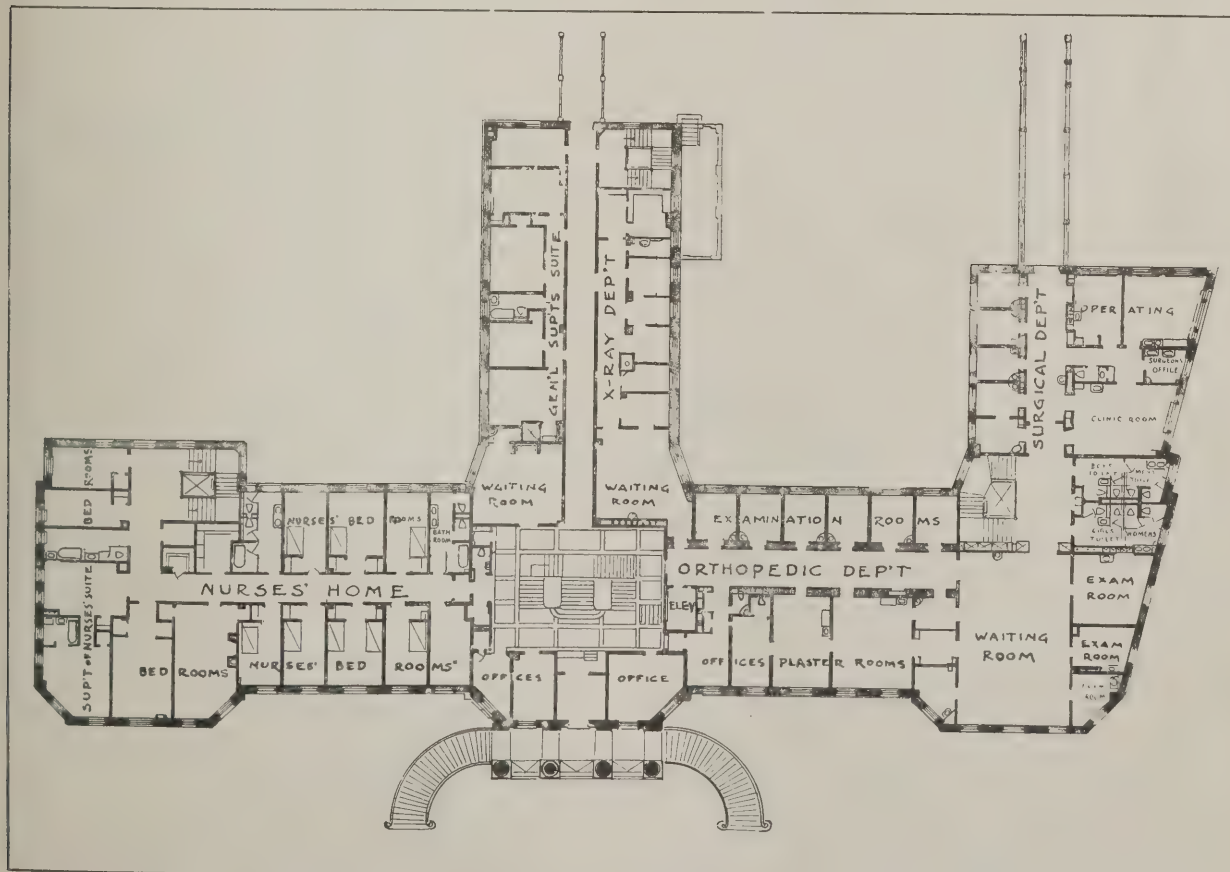
In connection with these illustrations it may be mentioned that the architect, Mr. James A. Swan, F.R.I.B.A., of Birmingham, was responsible not only for the general design, but also prepared full-size cartoons and models for the carving, plaster-work and painted glass.

Interior Details, Free Trade Hall, Manchester.

These details, it will be noted, relate especially to the balconies of the large hall. The baluster used is of good outline, and the brackets and shell ornaments are very admirably fashioned. The mouldings, too, are of satisfactory contour.

Restaurant at the Ritz Hotel, London.

In succeeding weeks we shall publish four double-page plates of working drawings of the Ritz Hotel, London, by Messrs. Mewès and Davis. The first, here shown, illustrates the large Restaurant, which is on the ground floor of the building, overlooking Piccadilly and the Green Park. In regard to the plan, it may be pointed out that though, owing to conditions of the site, it was not possible to make the room a



CHILDREN'S HOSPITAL, BOSTON, MASS.: PRINCIPAL FLOOR PLAN OF MAIN BLOCK.

SHEPLEY, RUTAN AND COOLIDGE, ARCHITECTS.

true parallelogram, the expedient of the great oval on the ceiling so deceives the eye that the room appears to be quite square. The mural decorations of the Restaurant are inspired by the works of De Neufforge, and the famous print, "Le Bal Paré et Masqué," by St. Aubin, has been followed for the lustres that are so rich a feature of the room. The ceiling is painted with a blue sky and light clouds, surrounded by an oval gilt frame, and depending from it are the lustres referred to, joined by garlands in gilt bronze. The side overlooking the Green Park is composed of five large bay windows in the form of an arcade, in the bronze work of which are inserted *glaces sans tain*. These bay windows, which can be turned back, open out on to the terrace, from one end of which stairs lead down to a garden on a level with the Green Park.

SIR ROBERT ROWAND ANDERSON, ROYAL GOLD MEDALLIST, 1916.

THE Royal Gold Medal for the Promotion of Architecture, instituted by Queen Victoria in 1848, and continued by King Edward VII. and by his present Majesty King George V., is "annually conferred on some distinguished architect, or man of science or letters, who has designed or executed a building of high merit, or produced a work tending to promote or facilitate the knowledge of architecture or the various branches of science connected therewith." At a meeting of the Royal Institute held on January 31, it was announced that the Council had nominated Sir Robert Rowand Anderson for this year's award of the medal.

Sir R. Rowand Anderson, Kt., LL.D., F.R.S.E., H.R.S.A., F.R.I.B.A., was born in 1834, the son of Mr. James Anderson, solicitor, of Edinburgh, and his wife Margaret Rowand. He married, in 1863, Mary, daughter of Henry Ross, of Kinnahaird, co. Ross. He was knighted in 1902. It is by the University new buildings, and more especially the McEwan Hall, Edinburgh, which is in effect attached to them, that Sir Rowand is best known. On the completion of the latter building in 1898, the following minute was passed by the Senatus of Edinburgh University: "On the occasion of their first meeting subsequent to the opening of the McEwan Hall, the Senatus Academicus unanimously resolved to place upon record their sense of the value to the University of the services rendered by Dr. Rowand Anderson during a long period of years as architect of the

University New Buildings. So far as the structure for academic use are concerned, these buildings are considered as completed by the McEwan Hall, the occasion thus afforded of looking back over time elapsed since the first inception of the school brings to mind the constant care and thoughtfulness which Dr. Rowand Anderson has shown in providing for the many wants, often of a special kind, of medical departments. The Senatus recognise, at the same time, the hand of an artist in the architectural treatment of the buildings. While considerations of convenience have not been sacrificed to appearance, the planning of the interior arrangements has resulted in the effective external grouping which has made the New Medical School, as a whole, an acknowledged adornment to a city famous for its architectural monuments. In a building like the McEwan Hall, designed for University ceremonials, Dr. Rowand Anderson has an opportunity of disposing in greater freedom of the means of artistic expression, and the simple dignity of the main effect, both from an exterior and an interior view, together with the taste and reserve shown in the use of carved ornament, represent fittingly this side of academic life. The name of the University will be connected with one of the conspicuous architectural achievements of the closing years of the century, and the Senatus Academicus recognise that the merit of the design of the Hall entitles the architect to the lasting gratitude of the University."

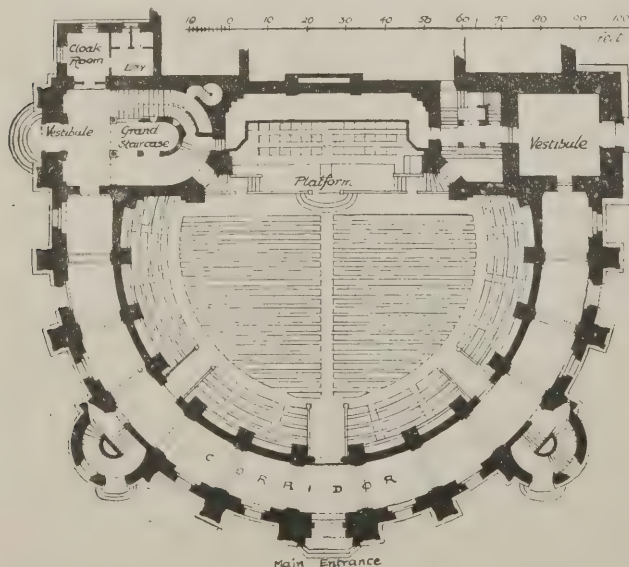
It is a commonplace of the guidebooks that the Medical School is "one of the ornaments of Edinburgh," and that it is the most completely equipped school in Europe as regards its laboratories, classrooms, dissecting-rooms, and museum. Its cost was £245,000.

The plan of the McEwan Hall is based upon the form of the ancient Greek theatre, and the general architectural treatment, like that of the Medical Schools, is Early Italian Renaissance. A dish-shaped steel roof is surmounted by a lantern 30 ft. high, the total height from street-level to top of lantern being 130 ft. Inside, the height to the dome light is 90 ft., and the internal diameter of the hall is 100 ft. The cost was £115,000. Sir Rowand is the author of the Edinburgh National Portrait Gallery, of the Central Hotel of the Caledonian Railway at Glasgow, of Mount Stewart House (the residence of the Duchess of Bute), of the Montrose and Buccleuch mansions in Edinburgh, and of many churches and schools in various parts of Scotland.

Sir Rowand, who was elected a Fellow of the Royal Institute of British Architects in 1903, has, by the wisdom and weight of his utterances as well as by his professional work, greatly influenced the trend of architectural practice in Scotland; and the formula in which the medal is presented to him "in virtue of his extensive works, his services in the cause of architectural education, and his high ideals concerning the art of architecture," is fully applicable in its every article.

ARCHITECTS AND THE WAR.

BY courtesy of the Architectural Association we reproduce the accompanying portrait of Captain H. P. G. Maule, F.R.I.B.A., of the Honourable Artillery Company, formerly Lecturer in master of the A.A. Schools. Captain Maule has been awarded the Military Cross for distinguished service in the field. Several other members of the A.A. have obtained this distinction, the latest additions to the list being Captain R. H. Madge of the 2nd Battalion Queen's Royal West Surrey Regiment; and Second-Lieutenant P. Dangerfield of the 1st Battalion, East Kent Regiment (Buffs). Second-Lieutenant Arthur Michael Durbin, A.R.I.B.A., of the 8th Battalion, Loyal North Durhamshire Regiment, has been awarded the Mi-



McEWAN HALL, EDINBURGH: GROUND-FLOOR PLAN.

SIR ROWAND ANDERSON, ARCHITECT.

cross for conspicuous gallantry and resource. Mr. Maurice E. Webb, F.R.I.B.A., temporary lieutenant, Royal Engineers, Past-President of the Architectural Association, was mentioned in Sir Ian Hamilton's despatch of December 11, 1915.

Names recently inscribed on the R.I.B.A. or A.A. rolls of honour are: Corporal H. E. J. Davidge, 13th Divisional Signal Co., Royal Engineers, who died on January 20, 1916, from wounds received in Gallipoli on September 12, 1915; Second-Lieutenant Henry Wood, 19th Battalion Royal Fusiliers, who was killed in action on January 2; Second-Lieutenant J. B. D. Hough (aged nineteen), student R.I.B.A., 5th East Yorks Regiment, who was killed in action in France on January 16; Trooper Gordon Scott Ferguson (aged eighteen), C Squadron, 1/1st Scottish Horse, who was killed in action at the Dardanelles on October 7.

Captain Denis H. Walker, Student R.I.B.A., 1/5 Battalion, A.P.W.O., Yorkshire Regiment, was dangerously wounded near Ypres on January 25; and Captain F. O. Marchant, 5th East Kent Regiment (The Buffs), was wounded on January 12 Persian Gulf Expedition).

Artists' Rifles O.T.C.

One remarkable effect of the Earl of Derby's recruiting scheme has been that a large number of professional men from the technical trades, including architects, engineers, and surveyors, having realised that they must no longer delay offering their services to the country, have applied to the Artists' Rifles O.T.C. for direct enlistment.

Moreover, of those who have attested under the scheme, many have felt impatience for their groups to be called up, and, solving the problem for themselves, have applied for and obtained transfer from Army Reserve B, in which Derby recruits are placed, to some regular or Territorial unit. This course is particularly favoured by men whose education and social position render them eligible for commissions. The transfer of men who have been placed in

Army Reserve B may be effected as soon as possible after they have been approved and found medically fit, or postponed until a later date, provided that at such later date the requirements of the service necessitate the transfer.

The corps has a special class for training members who desire to obtain commissions in the Royal Engineers and Pioneer Battalions, and for testing candidates for such commissions.

CIVIC ARTS ASSOCIATION.

It is worth while to preserve here the terms of the resolution by which the Civic Arts Association was founded. They are as follows:—"That the Civic Arts Association is formed for the following, and for kindred objects:—(1) To promote the utilisation, for civic purposes, of the arts and crafts throughout the country; (2) to be a consultative body on questions appertaining to memorials, so that these may be worthy of their purpose; (3) to support all efforts to embellish our cities, towns, and villages, by the employment of our artists and craftsmen. It is thought that later opportunities may occur for the further development of the scheme for presenting gifts to communities in the devastated areas in the countries of our Allies; and it is hoped that in that event the Civic Arts Association may perform a useful function." In moving this resolution, Earl Beauchamp, whose tenure of office as a singularly sympathetic First Commissioner of Works (1911-14) was all too brief, brought into striking relief the curious fact that British towns, while they are, in the sanitary sense, the best organised and the best policed in the world, are, in the visual or architectural sense, the worst; less care and taste being bestowed by civic authorities upon the proportion and placing of public monuments, and the ordering and embellishment of spaces, than in any other civilised country. We have concentrated on one duty to the neglect of the other, but there is no danger that we shall repeat this mistake by simply reversing the positions. What will happen will be the translation into action of the recognition that the health of towns has its moral, spiritual, and æsthetic, as well as its physical aspects, and the need for this service has brought the Civic Arts Association into being.

LUCA DELLA ROBBIA'S "CANTORIA."

NOT till the year 1431 did Luca Della Robbia emerge from his early obscurity as a student and craftsman. Then it was he entered the competition for the *cantoria*, or singing-loft, for the Duomo at Florence. The theme was the 150th Psalm—*Laudate Dominum*. The progress of the competitors was watched with the keenest interest. Criticism of the skill of the master, Donatello, was in everybody's mouth; but as the work advanced, one other name was linked with his for premier honours—that of Luca Della Robbia—and wagers were freely laid upon the result. Luca's *cantoria* was finished in 1433, well ahead of Donatello's. It was a splendid achievement. The technique of the composition is classical, but it displays as well an absolute sense of freedom. Luca sculptured sound and step (see illustration of panel on page 65). Comparing the two *cantorie*, Luca's and Donatello's, now side by side in the Museo del Duomo, one is struck with the superior grace and resonance of the former, whilst for spontaneity and finish they are on a par. Thus Luca Della Robbia won the guerdon, and took his place with Donatello and Ghiberti—"the three brightest stars of the *Risorgimento*."



CAPT. H. P. G. MAULE, HON. ARTILLERY COMPANY.

(Awarded the Military Cross.)

THE BUILDER'S POINT OF VIEW.

BY JAMES BROWN.

(Concluded from page 62, No. 1101).

Quality of Timber.

HAVING now dealt with the source and dimensions of red deal, we will consider the specification as to quality. This generally is covered by a clause requiring the timber to be free from sap, shakes, large loose and dead knots, and all other defects, and so universal is the use of this clause that we find it embodied in specifications for all manner of jobs, ranging from the villa costing £500 to the mansion, cathedral, or national building costing anything from £50,000 up. Now, if the building owner really desires to have timber of this superlative degree of excellence, and is prepared to pay the enormous charges its use will entail, then the problem is comparatively simple for the builder, who merely requires to interpret the specification literally and provide in his estimate for the use of such timber, and for the rejection of all that does not approach the required standard.

But suppose the building owner does not require, or is not prepared to pay for, such high-class materials—and this latter condition obtains in quite 95 per cent. of contracts—then such a clause is misleading, and only causes misunderstanding and disputes. The builder, acting on precedent and in perfect good faith, quotes for and uses a reasonably sound article similar to what he has previously used with satisfactory results on similar jobs. The job proceeds, and some question arises as to the quality of the timber. The specification is produced, and, of course, is found clearly to require the timber to be free from sap, etc.

The architect says, "In the interests of my client and my reputation, I must reject this timber, because it does not strictly comply with the specification," while the builder replies that "Though it is not, perhaps, free from sap etc., it is as good a quality as you have a reasonable right to expect, bearing in mind the nature of the job, and the fact that the timber is equal to what I have used on similar jobs for you."

"Further, if the various builders, when tendering for the job, had priced it on a literal interpretation of the specification, the amount of the tender would have been so prohibitive that your client would have said, 'I won't pay this amount, which is altogether too high. So-and-So's job, which is something like what I require, cost only so much. How is it my job is so much more? The price must be cut down. I'm not building a cathedral,'" etc. All this trouble and bother could be avoided by the use of a series of carefully drafted and up-to-date clauses, each dealing with a different quality of work, as, for instance:

Classifying Specification.

No. 1 would deal with the mansion, cathedral, or other job where absolute perfection was essential and expense no object. No. 2 would provide for a really good job where the question of expense had to be considered to a certain extent. No. 3 would specify a good quality job, but one where expense was a real consideration, and so on.

The drafting of a series of clauses on these lines, and their periodical revision in order to keep them up to date, should not be a very difficult matter for a small joint committee composed of, say, a few members of the R.I.B.A. and the Master

Builders' Associations, with one or two timber importers added, and the sooner such a committee is appointed and gets to work the better it will be for all parties.

There is no doubt that, from a variety of causes over which we in this country have no control, the prices of timber have steadily increased, and will continue to do so, while at the same time the quality has gone down, with every indication of still further deterioration. Personally, I do not think the timber famine we occasionally hear of is likely to materialise, but it is certain we must prepare for a steady increase in price, with a certain depreciation in quality, and whether we like it or not this is a situation we shall be compelled to accept.

Deterioration of Timber.

While some of this deterioration is due to a shortage of mature and well-grown trees in the accessible forests, a certain amount is caused by the enormous development of the saw-milling industry in the countries of origin. This I have dealt with earlier, but only as it affected dimensions. I will now deal briefly with its effect on quality.

The trees, after being cut down and trimmed in the forest, are run down to the ponds adjoining the mills, and while floating are sorted into sizes; then they are taken into the mill, sawn to dimensions, sorted, branded, and stacked for seasoning and export, the high-class shipments being carefully graded into three or more qualities, the prices of which vary very considerably. As an instance of this, take the following prices which were actually paid for red deals in 1914: 4 in. by 9 in.—1st, £25; 2nd, £20; 3rd, £15; 4th, £12 5s. (4 in. by 11 in.). 2 in. by 8 in.—1st, £17 10s.; 2nd, £12.

This means a difference in cost of quite 40 per cent. between first and third deals of the same dimensions (4 in. by 9 in.), and is due solely to the difference in quality. At the same time, it shows that deals of the same quality, but of different dimensions (4 in. by 9 in. and 2 in. by 8 in.), vary 40 per cent. in cost, solely on account of the difference in size.

It would therefore appear that the best paying policy for the shipper to adopt is to turn out as many large-sized, high-priced deals as he can, and we may depend upon it he is quite alive to the advisability of pursuing this policy. We cannot suppose that he is in the business solely for the benefit of his health. Now, though he wants to turn out as large a proportion of high-price deals as he possibly can, he must maintain a reasonably good standard of quality, or his sales will decrease and he will suffer in reputation and pocket.

It may be taken for granted that he is quite aware of this, and in consequence the best shipments are graded on fair and equitable lines; but, for all this, it will be found that timber even of first quality and of the best shipments, does not literally comply with a clause requiring it to be free from sap, shakes, etc. Such timber will certainly be free from large, loose, and dead knots, shakes, heart-centres, and discoloured sap, but practically every deal in the parcel will have a certain quantity of bright sap on one or both edges. The difficulty here is that the shipper and importer both flatly refuse to admit for an

instant that the presence of a certain amount of bright sap on an otherwise sound deal is a defect.

A Deal in Deal.

The builder says, "I want some by 8 in. best red deal absolutely free from sap, etc. What is your price?" The porter says, "I have none. It can't be done; but if your client really requires such a superfine article and has plenty of money to burn, I suggest you have 4 in. by 9 in. or 3 in. by 11 in. first quality. These you can cart to your mill, select the best of the deals, and cut them down to your dimensions by sawing off the outer slabs, which you may be able to find a use for. Thus you will get rid of the sap which your client objects." He then produces his order book and proceeds to strain: "How many standards shall I have?" "You? We have a real fine parcel of 4 in. by 9 in. first Appanage just arrived, bright, sound, good lengths, and in prime condition. I will take £25 for them. What are you doing?" "Look here, have a standard lot loaded direct on truck, and I will take 5s. less. What do you say?"

What can the builder say?

This is the exact position that has to be faced when a builder is on the look-out for timber free from sap, etc.

I must admit the shipper is quite justified in his attitude. Looking at the question from his point of view, why should he be troubled to all this trouble and fuss? His shipment is perhaps recognised as one of the very best in the market, his goods command a ready sale at top prices, each deal is honestly what it professes to be; and then, should he alter his methods of selection and grading?

There are hundreds of shippers each exporting several qualities. Some of the shippers make a very clear and distinct grading into 1st, 2nd, 3rd, and so on. A few even have an "extra first," and then follow on with 1st, 2nd, etc. Some grade their goods "unsorted," and let it go at that. So that it would appear that the question is much too complicated to be properly dealt with in the scope of this paper.

It should, however, be clearly understood that the term 3rd or 4th quality does not imply that the timber so designated is so poor in quality as to be unsuitable for use in good-class buildings. On the contrary, it will be found that these qualities of a good shipment contain a very large proportion of really good carcassing timber.

The Differing Qualities.

Suppose we consider the best shipment from say the Archangel or Gefle districts, we shall find generally those of first quality are clean, sound deals with a certain amount of bright sap on one or both edges and excellent for joinery. Second quality are a little coarser than first, but, all the same, good joiners' timber. Third quality good bright carcassing timber, coarser than seconds, and with a certain quantity of heart-centres. Fourth quality, coarser than thirds; Gefle being rather freer from heart-centres than Archangel. There is a certain amount of variation in the timber and in builders' opinions respecting same. Some prefer Archangel for all purposes, others choose Swedish goods, while some prefer Archangel or Swedish for their joinery,

Petrograd, Finnish, or Swedish for carcassing. But in no case do these timbers as imported comply with the drastic specification now in common use.

Now, though I have confined myself principally to red deal, my remarks apply equally to most of the other building timbers; and everything seems to indicate the future has in store for us an increased development in the sawing and machining industry at the ports of origin, with prices on the up grade and quality on the down grade, and we may as well face the situation boldly and frankly, as nothing but trouble can ensue if we continue to refuse to acknowledge facts.

Suggestions for Reform.

I feel more than ever the difficult nature of the problem you as architects and we as builders have to meet. Although any suggestions I can make in relation to simplifying the problem must of necessity be very tentative—I might almost say risky—I am nevertheless strongly tempted to say a few words under this head. You will have gathered in what a difficult position the builder is placed, and I myself fully recognise the difficulties on your part, difficulties which lead to a want of mutual understanding even though both sides may be acting in perfect good faith and with a desire to serve the best interests of their common employer.

As I am the sole representative here of one side or interest, it is with some diffidence I suggest that a strong committee formed of architects and builders, with perhaps an accountant, might be able to draw up some scheme which would be an improvement on the present system. For instance, it is possible that arrangements might be made by which the bonus system could be brought into a practical form. Or again, the system of carrying out jobs on commission—graduated or otherwise—might be considered and dealt with.

With regard to the latter system, I have during the last few years had practical experience of this, as nearly one-half of the business transacted by my firm during that period was on a commission basis. The jobs ranged in size from £500 to upwards of £15,000, and in each and every case the results were satisfactory to all parties concerned.

A PROBLEM IN CHURCH ARCHITECTURE.

A correspondent of the "Guardian" raises some interesting points with respect to certain peculiar features of a thirteenth-century church in Hayling Island. Doubtless some of our readers could throw light on the problem he states.

I recently visited (he writes) the thirteenth-century church of an alien priory, erected by the monks of Jumièges, in Hayling Island. The present building has no aisleless chancel, east of the central tower. The chancel is about 40 ft. long by 19 ft. wide. There is no step under the chancel arch, the floor of the nave and chancel being level up to the present Communion-rail, which is about 15 ft. west of the east wall of the chancel. There are no steps inside the sacrum except modern wooden platforms, but in the south wall is an original piscina, the present height of which, with regard to existing floor-levels, seems to suggest that the original floor must have been lower than present. An examination of the bases of the chancel-arch piers, as well as a priest's door in the south wall of the chancel, does not suggest a step under the chancel arch.

I know of old churches that have a step down at this point, and if it was so here a single-step at the Communion-rail would make the floor-level of the sacrum 6 in. or 7 in. lower than at present, which would be more convenient for the use of the piscina. Otherwise it would appear that there was no step at the rail, but only a footpace on which the Altar Table stood. In such a case might the old custom of using "houesling" boards, which could be provided with kneelers, have made the usual step unnecessary? The actual floor could not be examined, as it was covered with carpet, but I should be interested to know whether it was usual in chancels of the size mentioned to have the space inside the sacrum level with the rest of the chancel, except, of course, the central part, which would be some distance from the side wall in which the piscina is placed.

SOCIETIES AND INSTITUTIONS.

The Gothic Revival and its Effects.

A paper with this title was read before the Architectural Association on February 3 by Mr. R. M. Butler, F.R.I.B.A. The paper traced the revival of Gothic architecture from its first beginnings at the house commenced by Horace Walpole in 1753, and finished in 1770, at Strawberry Hill, which was rebuilt in "the Gothic Taste," as it was then called, and explained some of the causes of the failure of the Revival to recreate a living style of architecture such as existed in the Middle Ages. Walpole's initiative set the fashion, and later the novels of Sir Walter Scott had no small share in popularising the taste for Gothic. The earlier churches and houses were mere travesties of mediæval art, as their designers were ignorant of its principles. The first important building in England built in the Gothic style was the Houses of Parliament at Westminster, designed in 1835 by Sir Charles Barry, who was assisted in the design of the ornamental details by A. W. Pugin. It was one of the finest modern public buildings in Europe, and far and away the best erected by the British Government. Later, the influence of Pugin's writings, the Great Exhibition of 1851, the publication of the works of John Ruskin, the Oxford Movement, and a variety of other causes led to Gothic becoming the dominant style of the mid-nineteenth century, eclipsing traditional English classical art, which had prevailed until well into the century.

By 1850 Gothic was in full swing in England, and had been introduced into Ireland, and to doubt its superiority was considered evidence of bad taste; it was then deemed the only possible style for a Christian church. Gothic also came into vogue for secular purposes, but the modern version was an incongruous and artificial form of design, in that it neglected alike the traditional elements of the old domestic work, and the conditions of modern times.

The growing cheapness of foreign travel, the writings of Ruskin, and other factors brought about the introduction of foreign and exotic features, the taste for which rapidly developed, proving a wholly regrettable influence, which tended later to discredit the Revival movement. The copyism and adaptation of mediæval architecture was carried out too literally, and with too little regard for modern requirements and conditions.

In the late "seventies" a change took place in England; the foundations of a

fine school of domestic architecture, superior to that of any other country, were laid, and the ecclesiastical side of the movement assumed a newer and more living character. The pioneers of this latter phase were J. D. Sedding, the architect of Holy Trinity Church, Chelsea, G. F. Bodley, R.A., and J. F. Bentley, the architect of the new Westminster Cathedral. The work of this period in England might be described as the best modern ecclesiastical work of Gothic type in the world, although it could not be said that the Gothic Revival, as a whole, had been a great success from the standpoint of the advancement of architecture.

The Gothic Revival in Ireland followed on similar lines to that in England. It was not progressive in character, however, but adhered to the early ideas and to the foreign influence which had done so much harm to English architecture before being discarded. The Gothic Revival in Ireland had failed to create really great architecture, partly because of its entire disregard of native Irish architectural traditions, partly because of the extent to which it fell under English and foreign influence at the beginning. It was lamentable that no effort was made to derive inspiration from the native remains. Nevertheless, some very creditable work was done. But the Gothic Revival had done relatively greater harm to the art of architecture in Ireland, because it destroyed the classical traditions that prevailed in the eighteenth and early nineteenth century.

The lecturer finally described the rise and progress of the modern school of Gothic architecture in America, which has now reached an exceptionally high level. The most important churches and colleges in the United States are designed in this style, including the immense work recently finished at the West Point Naval Academy.

The lecture was illustrated by a large number of lantern views of modern English and Irish churches, and slides of American Gothic architecture, lent for the occasion by Mr. Ralph Adams Cram, of Boston, a leader of the Gothic School in the United States.

Maori Architecture.

At the last meeting of the Edinburgh Architectural Association Mr. W. T. Oldrieve, F.R.I.B.A., delivered a lecture on "A Recent Visit to New Zealand and the South Sea Islands." The architecture of the Maoris was illustrated by views of their dwellings and guest-houses, as well as a series of wood carvings showing both ancient and modern workmanship. A fine specimen of the application of an ornamented war canoe to Maori house architecture was shown in a view of a "pataka," or food-house, built out a large war canoe on the shore of Papaitonga Lake. A plan of a typical Maori "whare," or dwelling-house, with details of its construction, was explained, as also a plan of a fortified Maori stronghold, or "pa." The construction of the typical colonial wood-framed bungalow was illustrated at various stages of construction as seen by the lecturer. The views of houses in Fiji, Tonga, and Samoa embraced both native and modern types, a remarkable difference being apparent between the native type of "palace" in which Tamassesse, High Chief of Samoa, was interviewed, and the modern-looking wood-built palace of King George II. of Tonga. The lecture was concluded by showing a selection of views of public buildings in Monte Video. A collection taken in aid of the Red Cross Society amounted to £3 13s. 10d.

LEGAL.

Engineering and Building Contract.

*Wellman, Seaver, and Head v.
Skinningrove Iron Company.*

February 9. Official Referee's Court. Before Mr. F. Pollock.

The hearing was continued of the action in which Messrs. Wellman, Seaver, Head, and Co., of Victoria Street, Westminster, sought to recover from the Skinningrove Iron Company £19,000, balance of a charge of £80,313 for erecting two steel furnaces at their Skinningrove Works near Middlesbrough.

The case for the defence was continued. Mr. Thos. Chas. Hutchinson, managing director of the defendant company and past president of the Cleveland Steel Masters' Association, was the first witness called for the defence. He said that early in 1912 the company was considering the question of extending the plant, at which time they had a Talbot furnace in operation. Mr. Head knew all about the works, as before that time he had put up some cranes for the company. After an interview between Mr. Head and Mr. Wilson they together inspected the works, the result of which was that a proposal and tender for the two new furnaces for £50,000 was sent in. After further discussion an amended tender was sent. Further correspondence and interviews resulted in the plaintiffs agreeing to cut down the ironwork to 329 tons and to construct the furnaces for £58,000, which he (witness) accepted on behalf of the company, and after a visit to the works by Mr. Head he (witness) signed for certain alterations and additions.

The witness was cross-examined by Mr. Colefax as to the work which the defendants alleged they had had to do to complete the furnaces according to their requirements. They had, he said, put the furnace bottoms in, for which they claimed a set-off. They did not admit that the plaintiffs had agreed only to hold themselves responsible for the cost of the labour in putting those bottoms in. The bottoms had to be taken out and replaced because they had not been constructed as the defendants desired. As to the additional amount of metal claimed for by the plaintiffs, he said that the original contract provided for a weight of 251 tons 15 cwt., but it was afterwards altered to 329 tons.

Mr. Alfred Hutchinson, the assistant managing director of the defendant company, said that prior to his appointment to that office he was employed as blast furnace manager. He gave evidence of interviews that he had had with Mr. Head relative to the construction of the new furnaces, confirming the evidence of the previous witness as to Mr. Head's knowledge of the works. As a result of those interviews he said the first tender for £50,000 was sent in, and added that after the matter had been discussed an amended tender was discussed. Before the contract was signed, however, he consulted Mr. Talbot about it. There were many discussions as to what might and what might not be regarded as extras.

Mr. H. J. Crowe, chief engineer to the defendants, gave evidence as to the discussions which led up to the contract. He said that the work done by the defendants to the furnaces was necessitated by the way in which they had been constructed, and denied that there had been any material alteration in the designs by the defendants after they had been accepted. Examined on the various details of construction in regard to which the defendants had to complain, witness said that the lifting gear did not work well,

nor did the dampers, as originally fixed, but as finally fixed they worked right. The lifting gear was, however, not practicable. The rack ought to have been made of cast steel, but it was originally made of cast iron, with the result that pieces broke off because they were too weak. He would, however, have been quite satisfied with cast iron if it had been satisfactory. The break was caused by a notch cut for the girders which weakened it. That notch was not shown in the plans submitted to him. Extra brickwork had been put in between the gas and chimney flues to the extent of about 2 ft. additional thickness. That was done as a precautionary measure in order that it might be strong enough to withstand the pressure.

On February 10 it was announced that the parties had come to an agreement, and judgment was entered in accordance with the terms arranged.

NEWS ITEMS.

Plymouth Asylum Extension.

An extension to the asylum buildings at Blackadon, Plymouth, providing accommodation for 440 additional patients, is to be carried out. Messrs. Thornely and Rooke and Barron are the architects.

Illness of Mr. Maurice B. Adams.

We very much regret to learn that Mr. Maurice B. Adams, F.R.I.B.A., architectural editor of our contemporary the "Building News," is lying ill at a nursing home in London, after having undergone an operation.

Waterproofing a Church Wall.

The south wall of Killegney (Ireland) church, which has for many years been an eyesore owing to dampness, has now been made water-tight with Pudloes cement. Gratification has been expressed at this long-standing trouble having been satisfactorily overcome.

Reinforced Concrete in Waterworks Construction.

At the Concrete Institute, Denison House, 296, Vauxhall Bridge Road, Westminster, at 5.30 p.m. to-day, February 16, Mr. Charles F. March, M.Inst.C.E., is reading a paper on "Reinforced Concrete as Applied to Waterworks Construction."

Canadian Hospital at Orpington.

The new Canadian Hospital at Orpington, Kent, is nearing completion. It is built on the hut system, and covers several acres of ground. The hospital will be ready for occupation and service by the end of this month. The total outlay, which is being borne by the Dominion, is expected to exceed £50,000.

"Osram" Lamps for Chinese Tramways.

The General Electric Company of China, Limited, Shanghai, report that they have for the sixth time been successful in securing the yearly contract for the supply of "Osram" traction type lamps to the Shanghai Tramways. This contract was secured in competition with the suppliers of many other makes of lamps.

Bradford War Hospital Scheme.

It has been decided to provide a war hospital at Bradford which will give a total accommodation of 1,200 beds. Mr. Holland is the architect. In order that all the buildings may be grouped together on one site the whole of the buildings at Horton Green will be taken over and the remaining union patients will be moved elsewhere. The report of the committee responsible for the scheme states that it is suggested that "after the war the new pavilions for patients be pulled down and

the materials sold, the amount realised being returned to the Lord Mayor for the benefit of the new infirmary, or taken over by the Guardians, if found useful, at valuation."

Military Building.

By way of showing how a platoon could provide shelter for itself, a building with walls of rammed earth has been built at Guildford by the local companies of the Volunteer Training Corps. The building was put up in ten hours by fifty-two men and is constructed entirely of earth with a corrugated iron roof weighing one ton. It is 22 ft. square, the walls being 18 in. thick and 7 ft. high.

Trade Union Methods.

The North Staffordshire Building Trades Federation (according to the "Staffordshire Sentinel") have issued to the members of all the societies affiliated to them a card of membership which they will be required to carry with them to be produced when requested as proof that they belong to their respective unions. Members are instructed to challenge their workmates, and to report particulars of cases when a man cannot produce a card.

Coventry's Housing Scheme.

The contractors for 600 new houses at Stoke Heath, Coventry, have begun building operations. During the past three months the land acquired for the houses has been cleared of hedges, drains and gullies. Mains have been put in, and the site has been almost encircled with railway metal. The houses will form fourteen streets, each house will have a garden. A site for a permanent institute has been secured. It is expected that the houses will be ready for occupation by midsummer.

New Cunard Buildings, Liverpool.

The new Cunard building at the Pierhead, Liverpool (Messrs. Willink & Thicknesse, architects), is rapidly approaching completion. In order to give some idea of its size, a local newspaper recording a visit of inspection by the Liverpool Architectural Society, says with a certain amount of humorous exaggeration: "Latecomers set out in search of their friends, toiling manfully up flight after flight of stairs until they found themselves close to the heavens. But no sign of the party did they see, and after wandering through multitudinous chambers, dodging scaffolding, they eventually found themselves in the basement amongst the electrical apparatus. Then they admitted defeat in their efforts to discover the earlier comers, and completed their inspection 'on their own.'"

Leeds School of Art: Department of Architecture.

As a result of a recent conference between the Board of Architectural Education of the Royal Institute of British Architects and representatives of the Leeds Education Authority, the Department of Architecture of the Leeds School of Art has been placed on the list of Architectural Schools "recognised" by the Royal Institute of British Architects. It is believed that Leeds is the first school of art to have recognition granted to the Department of Architecture. The recognition has been granted after visits of inspection by deputations of the R.I.B.A. and marks their approval of the work done and the curriculum of studies arranged by the Department. As a consequence of recognition, students passing satisfactorily through a prescribed course of study become exempt from the R.I.B.A. Intermediate Examination.

ELECTRICAL NOTES.

Electricity in Building Operations.

There is, perhaps, no class of industry outside the purely engineering machine shop or mill where electricity can be used to such advantage as for building construction, and where it is used so little. Perhaps the reason is that builders have never fully appreciated how portable and convenient the electric motor is and how easily it may be applied to drive anything. So they still carry on with their old undertype engine driving the mortar mixer and what not, their steam cranes complete with engine and boiler, and all the multitude of other inefficient and antiquated devices, requiring much time to fix and dismantle, with complications like coal, water, and special trades to work each device. The advantages of electricity could not have been more tersely summarised than was recently done by Mr. J. E. Van Hoosear before the Builders' Congress at San Francisco, and we shall endeavour to give a brief abstract of his points.

To commence with, the work that can be done by electricity is only limited by the desires of the individual and can be applied from the first operation of clearing a plot to the last operation of polishing the floors. A motor-driven saw is set up to deal with any timber that may be on the site and electricity is used to explode powder in removing stumps or rocks. Excavation takes place by means of a motor-driven excavator, which deposits the earth into the trucks of a contractor's electric railway, which haul it to the dumping-ground and, on returning, deliver the building materials, such as cement, bricks, etc. If water accumulates, this is removed by an electrically-driven pump, which will work with an automatic float-switch.

Next, a motor-driven saw will do the sawing necessary for concrete forms, etc., motor-driven mixers are employed for making the concrete, and this is lifted to different levels by an electrical hoist. Some data were collected in regard to a reinforced-concrete building of three storeys using 3,000 yards of material. The saw and mixer consumed together 2,000 kilowatt hours, or 1.5 yards per kilowatt hour (say 1½d). In a steel-structure concrete building, similarly, one kilowatt hour was consumed for each 2.15 yards mixed. To continue, on a large job the plumber can have motor-driven pipe-screwing and cutting machines. Outside plastered walls can be treated by motor-driven compressed-air plastering machines, which will lay on cement plaster to any thickness desired. Steel-structure buildings can be put together by hoisting and placing the beams by an electrically-driven hoist, whilst the rivets are driven and headed by hammers operated by a motor-driven air-compressor.

As regards the interior, the plaster for finishing the walls is mixed by a motor-driven mixer, which is found to give a better mix than the usual method. For marble work, electric power is found superior from start to finish, even in chiselling and drilling, for setting it in place. Where there is a hardwood finish the electric glue-pot is found indispensable and presents no fire risk. For polishing large floors there are portable scraping and sanding machines with self-contained motors, which effect large economy and are very efficient. Particulars are given of special motor-driven concrete mixers for building heavy walls or for positions where the forms cannot be reached from above, with which the work is done by the aid of compressed air. The foregoing list of applications by no means completes the tale, because by the very reason of its adaptability and control electricity can be applied in the form of power, heat, or light to practically every duty now accomplished less efficiently by other means.

Lamp-Locking Devices.

The Edison and Swan company have just introduced two devices for preventing the unauthorised removal of electric lamps in trains, hotels, public buildings, etc. The first consists merely of a special ring with two slots on the inside periphery, an internal groove, and an external screw-locking pin. This ring is slipped on to the lamp-cap so that the bayonet pins lie in the groove. The lamp is then inserted in the holder and the ring is turned until the locking-pin is opposite the bayonet slot in the holder when the locking-pin is screwed down by a suitable key. The other device is a special holder through which the locking-pin passes in a channel. The lamp is locked in the holder by screwing down the pin, the end of which engages with the bulge on the lamp-cap and prevents that small upward movement of the lamp necessary to release it from the bayonet catch. Both these devices are known by the title of "Lamlock," and can be used even when the lamp is fitted inside a shade.



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January 20, 1916.

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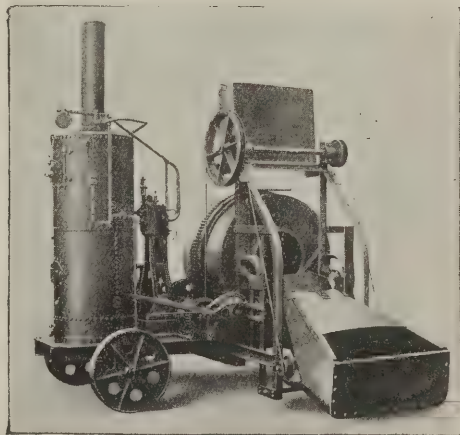
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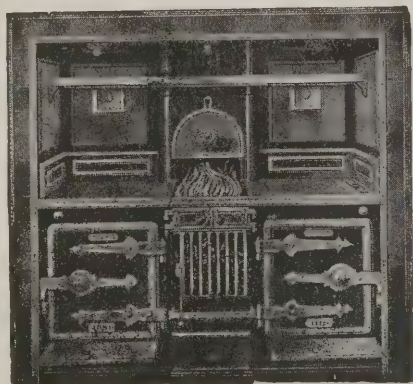
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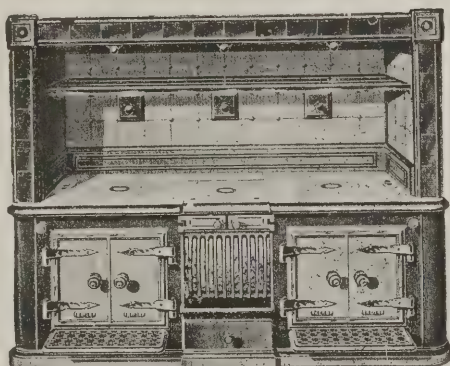
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THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, February 23, 1916.

Volume XLIII. No. 1103.



A VIEW OF MODERN ATHENS FROM THE ACROPOLIS (LYCABETTOS IN THE BACKGROUND).

THE ARCHITECTS' & BUILDERS' JOURNAL.

FEBRUARY 23, 1916.

TOTHILL STREET, WESTMINSTER.

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EDITORIAL.

IN an article in the "Hibbert Journal," Mr. C. R. Ashbee pleads for a qualitative standard of industry and living. We are to give up measuring wealth in terms of money. At this moment, he says, there are county councils in England who are closing schools to make up for the wastage of the war. Why are they thus throwing away the real wealth in their districts? "Because they cannot see it as real wealth, but persist in measuring it according to the money grants they receive from the Exchequer." With similar blindness, the workman and his wife hold the same fallacious view, measuring wealth by wages. Mr. Ashbee thinks that intelligent control of mechanical power in the interest of the community may result in the qualitative gradually making way for the qualitative standard in industry, and that the war has carried us far on in this direction. It is the prime lesson of the war, he declares, that "basic mechanism" shall be under the control and used for the benefit of the community. This control may be of both the State and the civic type; the State to have charge of postal, telegraphic, telephonic, and railway systems, national harbours, etc.; the city to control "circular saws, the mechanism of building operations, the lesser forms of power in small shops, land, quarries, water, air, the breathing space at the backs of houses, parks, open spaces."

But it is only "basic mechanism" that is to be under this control, from which all matters of personal and human creation should be free. Architecture, it may be presumed, would be classed as a "human creation," and, so far from suffering injury under the new *régime*, it would benefit hugely by the ascendancy of the qualitative view. A people that had got rid of the incubus of quantitative ideas, and had cast-off mammon-worship in favour of truer notions of what constitutes wealth, would begin to build nobly, and without undue regard to the "rascal counters," as Disraeli called them, that the heathen in their blindness regard as the essence rather than as the mere symbols of wealth. It all sounds very delightful—not the less so for its faint suggestion of echoing "News from Nowhere." Certainly wealth is not money, which, in a manner of speaking, is only the "mechanical basis" of wealth, and the fallacy of mistaking it for wealth vitiates everything, including architecture. Unfortunately this fundamental fallacy about it is intimately associated with its unrivalled power as a facile medium of exchange—its ready convertibility. In Morris's book, if we remember rightly, money was abolished. People considered themselves well repaid by the pleasure they took in their work. It is not to be supposed that Mr. Ashbee would abolish money; but to bring the majority of people to a sounder view of it

is hardly a less daring hope; and if its fulfilment is an indispensable preliminary to the welfare of "basic mechanism" and of art, the establishment of a "qualitative standard" is yet afar off. Nevertheless, the shock of the war, if it cannot change the earth's centre of gravity, will surely effect a considerable readjustment of views and values, and it is by no means too early to survey the prospect.

To make proposals in terms of State Socialism, however, is to engender unnecessary friction, to court opposition where co-operation and unanimity are essential. Manufacturers who are willingly giving up everything to the Government in time of war will jib at the suggestion of maintaining this docile attitude in time of peace. Organised workmen are already blatant and inopportune in assertions of independence. Clearly there is a necessity all round for a more vivid realisation that national organisation is as essential for "the second part of the great war" as for the first part. Mr. James Armstrong, in "The World's Work," warns us that peace may come with dramatic suddenness—that Germany is prepared for it, and we are not. He suggests that no system of State subsidies will enable us to compete successfully against the mammoth trusts of America and Germany, and it would seem also that simple and straightforward systems of trading are ineffectual against the cunning and unscrupulous strategy with which pooled resources are employed by the Germans for the undermining of our commerce and our industries. It is plain, therefore, that in advocating "qualitative efficiency," and State and civic control of basic mechanism, Mr. Ashbee has but touched with the tips of his fingers the fringe of the problem. But in the multitude of counsellors there is wisdom; and there are phases of the question upon which Mr. Ashbee has certainly earned the right to be heard. Lest his should be as the voice of one crying in the wilderness, other artists and educationists should freely follow his example; for architectural opinion must be duly pooled with the other national resources.

Now more than ever there is urgent need for a clearer perception of the dignity of business and the value of professional training and technical education. It is dawning, but will only come to high noon on a full recognition that our great industrial armies will, in the coming commercial war, need supremely efficient officering, and that to be an efficient officer in such a campaign is to be in the vanguard of honour, if only the situation is rightly construed. A man will then not lose caste by being in trade, and he will have been sent to public school or university not

ely to acquire tone or make influential friends, but to ure the best possible technical and scientific training a life of productive activity. It may be assumed as matter of course that degrees will be granted in, for mple, such subjects as architecture, so that the igation "B.Arch.," already established at Liver- l University, shall become hardly less familiar than A. or B.Sc., and shall convey quite as much evidence liberal education. To these changes the curricula he public schools should be carefully adapted; and technical institutes should be affiliated to the versities in suchwise as to ensure mutual advantage, ordinate activity, and the perfection of economic anisation. There must be no wastage of power ough overlapping or antagonism; and the trained n of business should soon reverse the position in hich he now stands relatively to the untrained—that say, the college-bred youth will be preferred. That is now rather suspected of impracticality by the erage employer may be due to ignorance and pre- ice, but is possibly a just reflection on the aggregate fficiency of our chaotic and disjointed educational orts. Nevertheless, it is a grossly unjust assump- n in so far as it fails to discriminate the fine from the erior elements or units; and this is a matter in which ublic opinion is woefully behind the times.

A series of articles appearing in "The Times" is ded "Seeing London." In his introductory obser- ions, the writer quotes the Speaker's recent nder, in a letter to the same journal, that the cient City churches form an excellent alternative to e museums. In effect, the churches are museums, , severally and collectively, they preserve many esting objects—carvings in wood and stone, metal- rk, paintings, stained glass, documents. The urches themselves, the writer shows, illustrate "every ase of fashion in architecture, every period of time, m the Conquest down to the Dissolution of the anasteries." Nowhere else, he contends, is the whole erly development of English church architecture, rman and Gothic, so closely and continuously illus- ted, and the churches of London thus present the est aggregation of such work that the kingdom can ow. Many of them, moreover, are open for inspection, d some of their vergers are really knowledgeable n. St. Bartholomew's, West Smithfield (c.1123); uthwark Cathedral, London Bridge (choir, 1208); e Temple Church, off Fleet Street (chancel, 1240); Etheldreda's, Holborn (c. 1300); St. Helen's, hopsgate (1475); and St. Margaret's, Westminster e 15th century), are the writer's select list for a first it, and about St. Etheldreda's he grows enthusiastic. is, he says, "perhaps the most beautiful little chapel e Decorated period in England, and almost rivals into Chapelle in Paris." He might have added that, merly the chapel of the Palace of the Bishops of y, it was at one time used as a school by the National iety, then became the first church in London in hich services were held in Welsh, was finally bought e Roman Catholic Communion, who restored and pened it in 1879, and that the glass in the east ow, which he says is larger than any in London, cept its own west window, cost £2,000, and was the t of the Duke of Norfolk. In Ely Place, we believe, atchman still follows the ancient practice of calling e hours and describing the state of the weather— ast one o'clock, and a cold, frosty morning," and so th.

Architects are in no great need of a reminder of the hness of London in church architecture, though it y be questioned whether their attitude towards it ot pretty much that of Tennyson's William towards ora: because he lived with her, he could not fall in e with her, but preferred a stranger who was rather

less worthy of his regard. Perhaps, when the archi- tect awakens to the fact that "the public" are forming themselves into parties and associations for the study of the London churches, and that the interest in the subject is sufficient to warrant this special series of articles in "The Times," he will not persist in the habit of postponing indefinitely visits that he has hitherto failed to make because it is so absurdly easy to make them. One can imagine (and envy) the fine zest with which those young architects who are with the colours will rediscover London, finding in its archi- tecture a beauty and an interest to which familiarity had made them formerly oblivious. That the general public—or any considerable section thereof—are turning their attention to such matters, whether or not in consequence of the closing of the museums, is surely of good augury. Any means of increasing their respect and admiration for good architecture is to be warmly welcomed; and we see no reason why architects should not employ some of their present superabundant leisure in helping to popularise the subject.

At the instance of the Ministry of Munitions, work on the London County Hall has been suspended. As this announcement, if misunderstood, might have a depressing effect, it is accompanied by the explanation that the sole reason for the stoppage is that the workmen are required for the construction of munition factories in various parts of the country. It is natural to feel some tinge of regret at the delay that must ensue, and a good deal of sympathy for those to whom it brings a certain amount of hardship. But if the country needs the men, that is the last word in the argument. Private interests, and public interests of subsidiary importance, must give way to immediate national needs, and we are sure that those who suffer in the cause will make no bitter cry. They will, however, while in all such instances accepting with due patience and forbearance all inevitable consequences of an unparalleled crisis, fulfil a further duty of patriotism by keeping a watchful eye on Government and civic action in matters relating to the building industry. They are in a position to proffer invaluable advice; which, however, if it is to carry any weight, must be tendered collectively. No doubt the Govern- ment will, before committing themselves to any drastic action of the kind indicated, first consult the "men who know," and existing professional and industrial organisations are in a position to afford invaluable help; but we should like to see the appointment by the Government of an Advisory Committee for the Building Industry. Competent and composite, and to an unusual degree detached from the sectional interests that are always suspected in a more homogeneous organisation, such a committee would be able to give instant and invaluable guidance and help on matters which a heavily burdened Government should be glad to delegate; or, to prevent the multipli- cation of such committees, a general Advisory Council on British Industries might be formed, if it were found that such a scheme could be kept within reasonable limit of numbers. Anyhow, it can hardly be overbold to suggest that well-ordered system should supersede chance or caprice. France is showing the way.

TO OUR READERS.

In view of the Government restrictions on the imports of paper and pulp, readers are requested to obtain their copies of this Journal from one source, by placing a regular order with a newsagent, instead of buying copies haphazard; in this way they will reduce the wastage of copies, and so enable us to do our part in the present effort for national economy.

HERE AND THERE.

RUSKIN, you will remember, said that Whistler knew no more about pictures than the policeman on beat in the gallery. But the policeman is not to be despised in this way. You can learn things about architecture from him if you will only take the trouble to find out what are his views. The policeman was standing gloriously serene in the midst of the traffic that whirls around the Marble Arch. He was a typical London policeman—that is to say, he came from the country, and so was a genial soul with none of that perky cock-sparrow knowingness which the London Council School tends to breed. With taxis and motor-omnibuses careering around, this policeman and I had a little conversation about birds and architecture. There was a starling on the cornice of the Marble Arch, and he was chivving the sparrows. The policeman knows the Marble Arch in all its moods, in the gloom of midnight, when it has a very solemn dignified look, and in the flush of dawn, when you can see many activities not associated with London—herons, for instance, flying across from Regent's Park to a more rural resting-place at Richmond. It was talk about herons, and this starling who came to roost on the cornice of the Marble Arch, that led the policeman to tell me about the rooms. I had never suspected any interior accommodation in that costly mass which was first a seemingly appropriate royal entry to Buckingham Palace; next a grand portal leading to nowhere in a corner of Hyde Park; and, lastly, is now a forlorn object in a sea of wood pavement. Doubtless it will suffer other changes in the future, when it may be moved again to some more useful sphere of influence; with a few alterations and additions it might even, in days of strict economy, be dressed up to serve as a memorial of the present War, and then advantage might be taken of the opportunity to add what it so badly needs—an attic, and a crowning piece of sculpture, though this must not be such a terrific thing as the modern quadriga on Decimus Burton's arch at Hyde Park Corner. (Chantry's equestrian statue of George IV., now in Trafalgar Square, was originally intended for the top of the Marble Arch.) All this, however, by way of digression from the fact which the policeman mentioned. Over each of the side archways is a little room, and above, across the whole width, is another room; the policeman says there is even such a place as a lavatory in this Marble Arch; and if you ask how these rooms are lighted, you have the answer on the side elevations, in the marble wreaths, which are glazed, and serve as windows to the rooms over the side archways, while a lantern light is provided for the larger room above; and if you ask further, how does one get up to these rooms, the policeman's wave of the hand will show you the unsuspected little doorways in the two central piers. I suppose that when the Marble Arch was erected in front of Buckingham Palace in the 'twenties, at a cost of £30,000, from designs by John Nash, with sculptures by Flaxman, Westmeath, and Rossi, and gates (costing £3,000) by Samuel Parker, these rooms constituted what we are accustomed to term the "porter's lodge," an expression which, when associated with nineteenth-century classical architecture, usually stands for a bijou affair of Doric columns and pediments enclosing some glorified kennels in which the porter and his family are required to live happily ever afterwards. But in this way the seventeenth and eighteenth centuries could do better even than the nineteenth. The lot of the night porter in Wren's entrance to the Middle Temple, where he was stowed away in what was little more than a cupboard, cannot have been altogether a happy one, nor

could the guardians who dwelt in the gates of the City be envied their luxurious quarters. Temple Bar, which had a good-sized room upstairs, provided considerably more ample accommodation. Its room used to be rented by Childs, the bankers, as a store for documents, and in later days was, I believe, a little dépôt for Twining's teas.

* * * *

In working out a comparison of costs for flat-pitched roofs and high-pitched roofs on small houses, Mr. Thomas Potter, with a knowledge practical building extending over more than half a century, has done what I have often thought would be an interesting thing to do. Since the Goths were busy in England, there has been a glorification of the steep roof with its dormer windows lighting unshapely and uncomfortable rooms under the tiles. It has been regarded as a most obvious expedient for economising space and cost, though the result, both as regards the outside and the inside, is far less satisfactory than that given by the low-pitch roof, which provides rooms squarely ceiled over and a cushion of dead air above them that acts as an excellent non-conductor. I am especially glad, therefore, to see Mr. Potter's figures testifying in favour of the better plan. The relative costs are worked out for a low-pitch and a high-pitch roof on a pair of cottages measuring 36 ft. x 24 ft., outside to outside. Taking the ordinary pitch for slates as the height one-third the span, and halving this for cubic contents, the latter would amount to 3,456 ft. A high-pitch roof with the roof two-thirds the span would measure 36 x 24 x 8 = 6,912 cub. ft., just double, less the slope. The superficial area of the roof with the low pitch would be 2/36.0 x 15.0 = 1,080 ft. super., and of the high pitch 2/36.0 x 20.0 = 1,440 ft. super., and the difference between the two approximately about 3½ squares at, say, £3 square—£10 10s. To this has to be added the cost of not less than four dormers extra at, say, 30s. each (£6)—there are scarcely ever fewer than four—bringing the total to £16 10s. above the cost of the low-pitch roof. As a set-off, there would be a saving of 120 ft. run of walling, 3 ft. in height, equal to 40 yds. super., at 6s. 6d. = £13, and about 30 yds. of skim plastering to walls at, say, 8d. = £1, a total of £14, or £2 10s. less than a high-pitch roof with all its other disadvantages. And, in addition, there is the extra amount of lathed ceilings incurred by the slopes, etc.; all of which goes to make a still stronger case for roofs of low pitch.

* * * *

Mr. Potter has also some useful comments on roof coverings. Plain tiles, he says, are the heaviest, asbestic tiles the lightest, and slates the best where it is necessary to save the roof water. "In a general way plain tiles cost the most, and French pantiles the least. Slates and many varieties of tiles of a lighter weight come in between these. Hipped roofs require the same amount of slates or tiles as a gabled ended roof, plus the waste in cutting. The weak parts of roofs in exposed situations are the hips, valleys, and dormers; the slates or tiles have to be cut to shape, and obviously do not obtain so firm a grip on the battens. On the other hand, gable ends incur the cost of brickwork, but which is partly balanced by the saving in hip tiles and waste in cutting. Asbestic tiles cost almost as much as slates, but the saving is in the amount of timber required for the roof. In exposed positions pantiles are liable to be blown off, and so require to be very carefully pointed to prevent the wind from blowing under." Points like these are especially valuable at a time like the present, when the cost of whatever building is going on has to be so carefully watched.

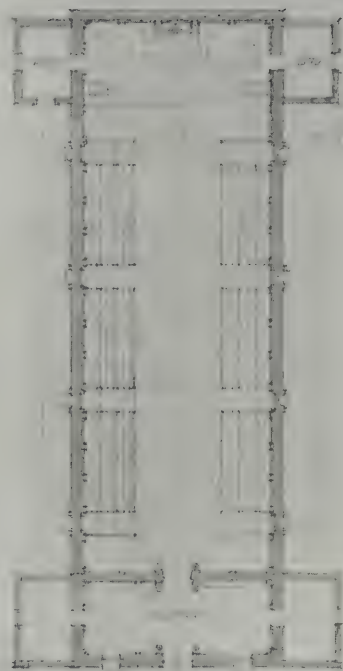
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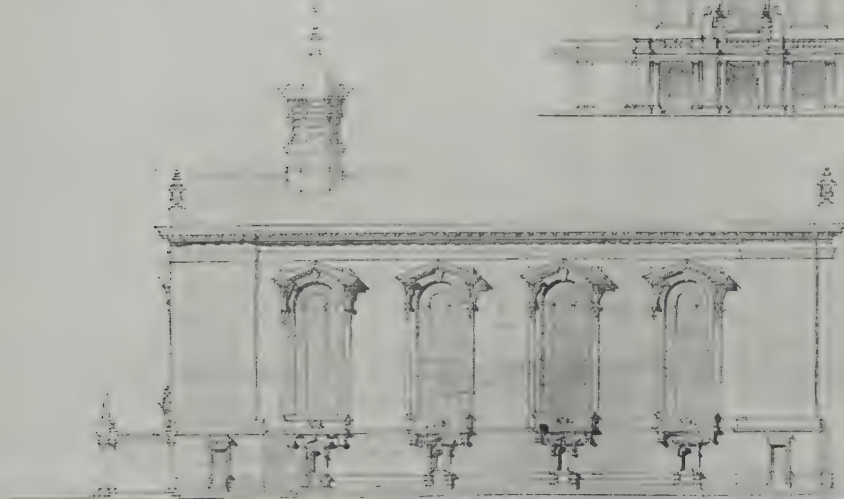
CURRENT ARCHITECTURE (SERIES III.) XX.—EXTENSION TO THE INSTITUTE, HAMPSTEAD GARDEN SUBURB.

E. L. LUTYENS, A.R.A., F.R.I.B.A., ARCHITECT.

R.I.B.A. TESTIMONY OF STUDY XXIII
DESIGN FOR A SCHOOL CHAPEL



10' 0" 10' 0" 10' 0" 10' 0" 10' 0"



Handwritten signature and date: 1875

STUDENTS' DRAWINGS (SERIES II.). XIII.—DESIGN FOR A SCHOOL CHAPEL.

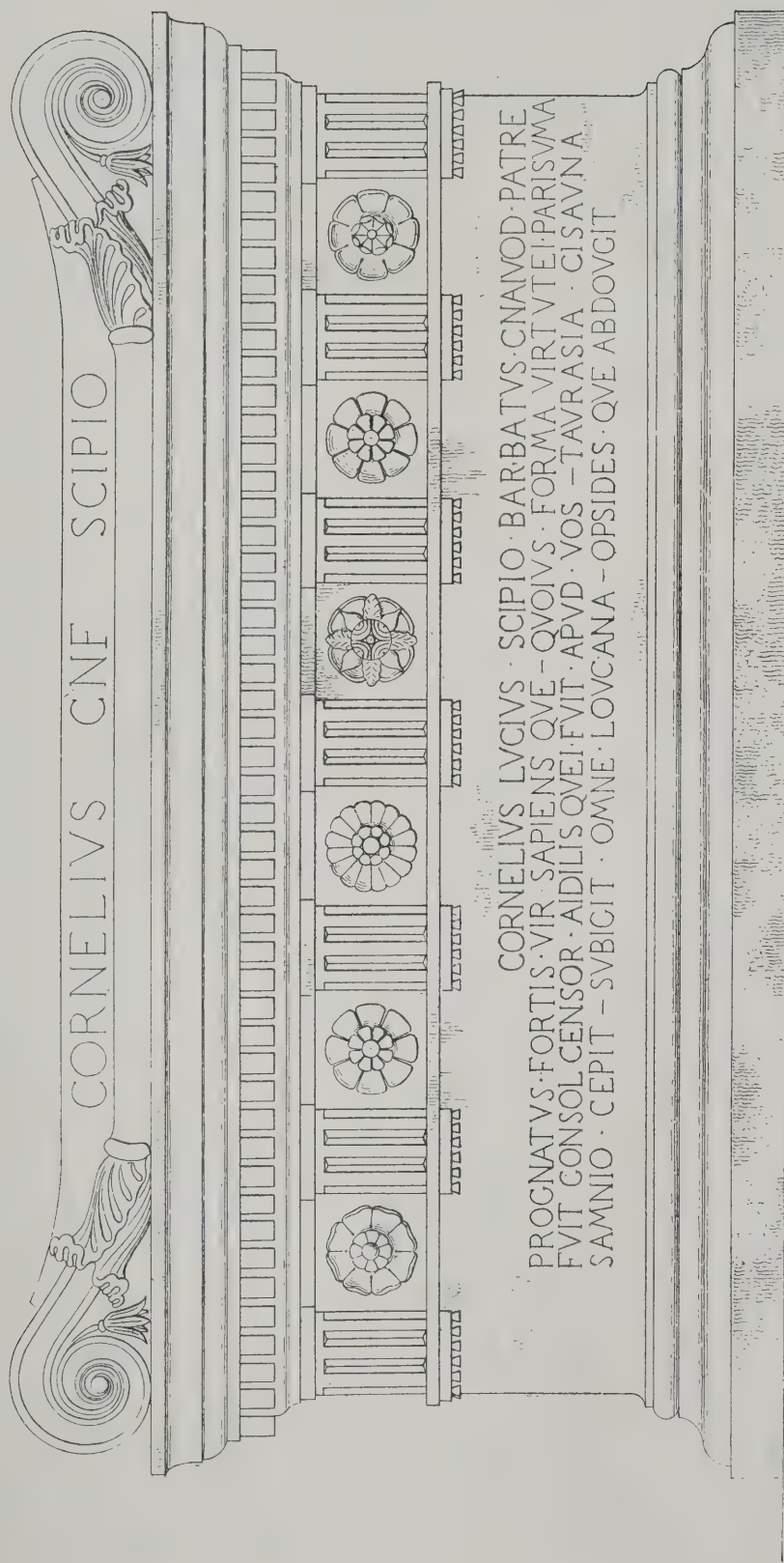
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MONUMENTS. XIII.—MONUMENT TO C. L. SCIPIO IN THE VATICAN MUSEUM, ROME.



CURRENT ARCHITECTURE (SERIES III). XXI.—ST. WILFRID'S, HARROGATE: INTERIOR, LOOKING EAST.
TEMPLE MOORE, F.R.I.B.A., ARCHITECT.

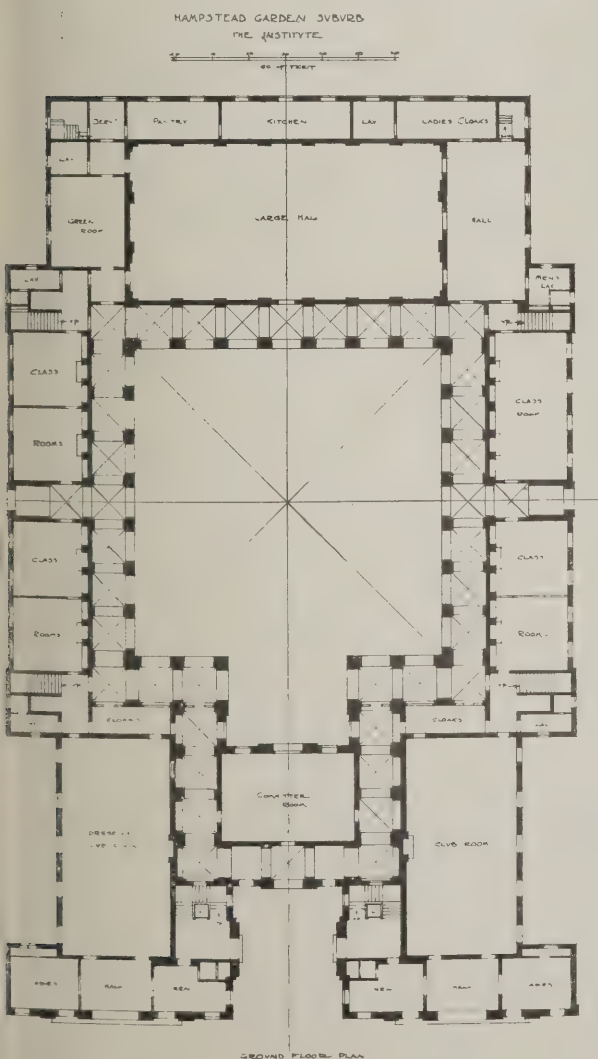


DETAILS OF CRAFTSMANSHIP. L.—PLASTERWORK OF DRAWING-ROOM CEILING, MELTON CONSTABLE, NORFOLK.

THE PLATES.

Extension to the Institute, Hampstead Garden Suburb.

ON the highest ground of the Hampstead Garden Suburb is a plateau about five acres in extent. Two churches have been erected upon it—St. Jude's, an episcopal church, on the south side, and the Free Church on the north—as well as vicarages and a portion of the range of houses that will eventually enclose the area. The west side is to remain open, but on the east side is to be a large institute. The plan below shows the scheme projected. A portion of it, forming the left-hand front corner, has already been built, and as soon as the necessary funds are available the remainder will be carried out; £4,000 has already been promised for the work, and it is hoped that the additional sum necessary will be forthcoming in the near future. In the portion already built a kindergarten and a high school are carried on under the able direction of Mrs. Bryant, and a similar vigorous activity is displayed in the art, music, cooking, typewriting, and other classes which have been established by the Management Committee, of which Canon Masterman is the president and Mrs. S. A. Barnett the vice-president. These latter classes have 1,140 paying students; and Sir Henry Wood (for music) and Sir George Frampton (for sculpture) are among those under whose direction they are conducted. In the



THE INSTITUTE, HAMPSTEAD GARDEN SUBURB:

GROUND-FLOOR PLAN.

E. L. LUTYENS, A.R.A., F.R.I.B.A., ARCHITECT.

large building here illustrated the full development of the work already begun would be rendered possible. The Hampstead Garden Suburb, Ltd., is showing a great public spirit in projecting this building, which will be unique of its kind. Mr. E. L. Lutyens, A.R.A., F.R.I.B.A., is the architect.

Design for a School Chapel.

The design illustrated, by Mr. Martin J. Slater, of Birmingham (now with the Forces), is one of the approved alternative subjects in design set by the R.I.B.A. as Testimonies of Study for the Final Examination. The conditions set were as follows: A school chapel to accommodate 250, of whom 150 are boys. Gallery at west end for organ and choir. Vestry for clergy and choir. Entrance porch, or narthex, with way up to gallery. Screen under gallery shutting off entrance from chapel. Drawings required: A plan and two elevations to $\frac{1}{8}$ in. scale, cross-section and one bay of longitudinal section to $\frac{1}{2}$ in. scale.

Weatherboarded Cottages of the Late Georgian Period.

Even in the midst of London there are cottages of this kind to be found, vestiges of a time when questions of fire-resisting construction were not so insistent, and in the immediate districts around London and in the adjacent counties innumerable examples can be seen. It is a very homely manner of building, and the weather-boarding presents a delightful effect of toned surface after so many years of exposure. Looking at these old types, with their window-boxes, their simple little door-hoods, and pantile roofs, one realises that the modern brick cottage is a blatant conceit.

Monument in the Vatican Museum.

The feature of this design is the bold treatment of the triglyph and rosette frieze and the line scrolls. It is essentially architectural, though the claims of good lettering find ample recognition on the face of the pedestal.

St. Wilfrid's, Harrogate.

Mr. Temple Moore is in the fore-rank of our church architects, and St. Wilfrid's, Harrogate, is a very admirable example of his work. The lines of the interior are splendid, and the general effect is most spacious. At the east end, it will be noted, there is a very remarkable treatment of two three-light windows set at an angle behind the altar.

Summerhill Court, Kingswinford.

The following particulars reached us too late to include with the plates which were published last week: The original house was built about thirty years ago. The additions recently carried out to the design of Mr. James A. Swan, F.R.I.B.A., include a billiard-room and a morning-room. The billiard-room (shown on the plate in last week's issue) has an angle panelled in mahogany, dull polished, an enriched fibrous plaster ceiling, and windows filled with coloured glass designs. The fireplace has a Pavonazzo marble surround, with a hearth of Hopton Wood. The electric-light fittings are in oxidised silver. The walls of the billiard-room between dado and frieze are covered with grey-green leather paper having a dull gold margin. The morning room is panelled in English oak. Mr. A. H. Guest, of Stourbridge, was the builder (and also executed the panelling). The King's Heath Guild were responsible for the carving and the plasterwork; and Messrs. Elkington supplied the electric-light fittings.

Plasterwork at Melton Constable, Norfolk.

The drawing-room ceiling at Melton Constable, of which we show two details, was carried out in 1687 and is a fine example of that rich intricate manner

which was then so much in favour. Flowers and foliage were treated in the most naturalistic manner possible, and in order to obtain the necessary delicacy and openwork it became the custom at this time to use lead piping or strips of sheet lead for the stalks and thin leaves. The fine quality of the plaster also permitted a high degree of finish and "thinness." Mr. Bankart has described this plaster as being composed of "carefully selected lime which had been slaked for many years, mixed with finely-sieved marble dust and various ingredients to regulate the setting as required." The inventiveness and brilliant realism of the English plaster workers can be well studied in two Norfolk houses, Felbrigg and Melton Constable, which possess plasterwork dated the same year (1687) and from the same hands. The setting out of the red drawing-room at Melton Constable and the drawing-room at Felbrigg is exactly alike, and there is considerable likeness in the treatment of the panels. The ceiling at Melton Constable has an enriched cornice; the panels are of the plain moulded variety enclosing finely modelled sprays of fruit and flowers, acanthus scrolls, and the arms of the builder, Sir Jacob Astley, surrounded by a close wreath. The plasterwork of this date is characterised by profusion, intricacy, and technical dexterity; and the very richness prevented a successful combination of decorative painting with the material, which was possible with the more severe plasterwork of Inigo Jones, as in the case of the Banqueting House in Whitehall. This profusion gave way before the sobriety of the early years of the eighteenth century; and the invasion of Italian stuccoists in the reign of George I. brought in an entirely new and questionable element. That it did not, however, entirely supersede the English school of plasterwork is manifest in the survival to this day of some of the finest traditions of that school.

Entrance and Lounge, Ritz Hotel, London.

The main entrance to the Ritz Hotel is in Arlington Street, on the east side. Steps lead up to the vestibule, which is circular in shape and opens into a lounge that extends to the Restaurant on the west side of the hotel. The vestibule and lounge are vaulted, built of *stuc pierre*, and relieved by massive gilt bronze fittings, balustrades and doors, the floor being carpeted with hand-woven "Savonnerie" carpets. Messrs. Mewès and Davis were the architects.

ARCHITECTS AND THE WAR.

TO the list of architects who have been awarded the Military Cross must be added Second-Lieut. G. Howard Jones, A.R.I.B.A. Mr. Howard Jones, who joined the Public Schools Battalion at Epsom immediately after the outbreak of war, was up to that time on the architectural staff of H.M. Office of Works, Storey's Gate, Westminster, where he had been engaged since serving his articles with Mr. Ivor Jones, A.R.I.B.A. (Ivor Jones and Percy Thomas), Cardiff. He has been responsible on two occasions for exceedingly useful work. As Brigade Scout Officer, he has discharged difficult observation duties in the front trenches, and has submitted reports and sketches of great importance. Also, in company with another officer and two men, he figured in an exciting wire-cutting episode between the British and German trenches in the neighbourhood of Loos. From the Public Schools Battalion Mr. Howard Jones was appointed as Second-Lieut. to the 3rd Welsh, and after being trained with them at Cardiff and Porthcawl was drafted out to France attached to the 2nd Welsh. He was present at the German counter-attack after the battle of Loos.

THE POSITION OF LIVERPOOL CATHEDRAL.

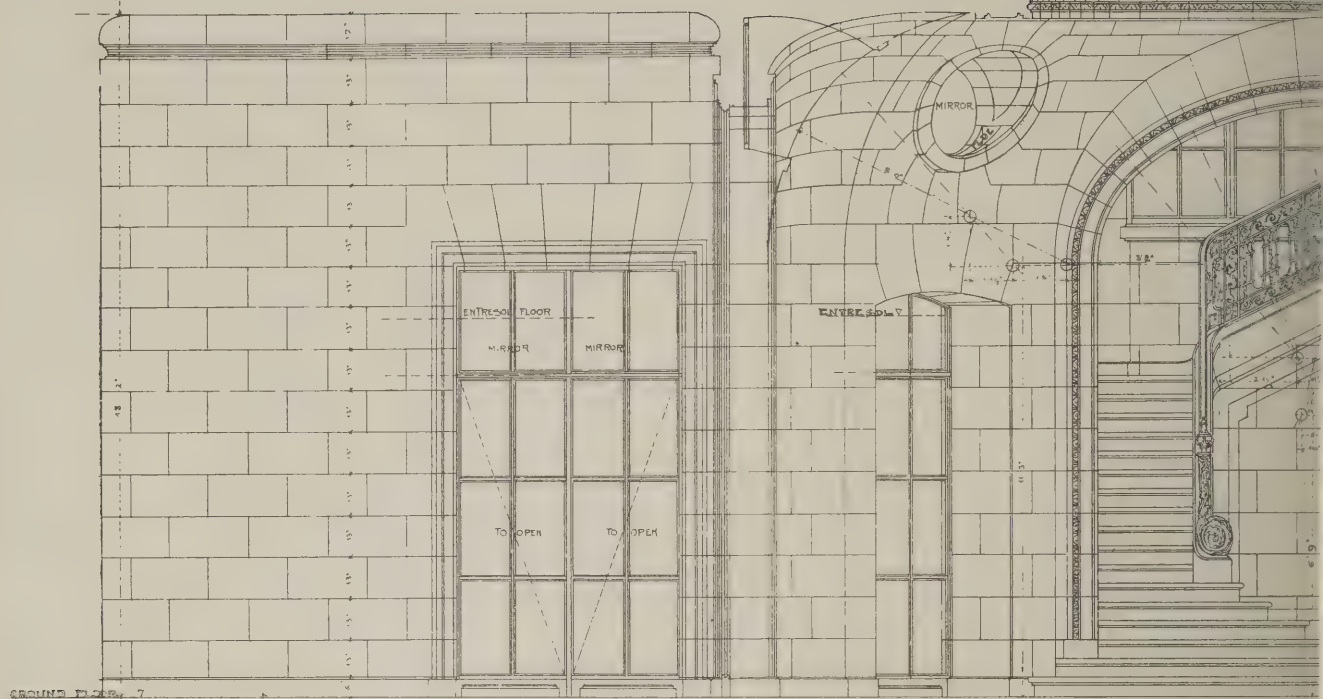
AT the annual meeting, on February 7, of the General Committee of Liverpool Cathedral, held in the Church House, under the chairmanship of the Bishop, it was decided to complete the shell of the choir and central space, to make it weather-proof, and then suspend operations until the end of the war. The position was explained in the Bishop's speech, as summarised below.

The report of the executive stated that several handsome donations had recently been received and they showed that in a time of peculiar difficulty, when the claims on the generosity of the public were so large, the diocese was determined that the first portion, now so near completion, of this splendid building shall at any rate not lie open to the weather. According to the estimates an addition to existing funds of about £5,000 will enable the choir and first transept to be covered in, and the committee looked forward with hope to securing this sum within the next few months. A further sum of £20,000 would be required to render the first portion of the building available for Divine service.

The report of the treasurers (Messrs. H. P. Harrison and H. H. Noble) was submitted by Mr. Harrison. This showed total contributions to the General Purposes Fund of £354,101, which, with the unexpended balances of special funds transferred amounting to £1,309, brought the total contributions up to £355,411. There was an expenditure of £328,983, leaving a credit balance of £26,427. For special purposes the credit side realised £116,332 against an expenditure of £54,752, leaving a credit balance of £61,580.

The Bishop remarked that the report outlined the policy which, after much thought and discussion, the Executive Committee had decided to follow in these abnormal times as to the building of the cathedral. Three courses were open. The first was to carry out the original purpose and to try to raise a sum of £40,000 so as to complete the cathedral choir and central space by midsummer next year. The second was to stop building altogether until the return of peace. The third was to complete the shell of the choir and central space, to roof it in, and, having made it weather-proof, to wait until the war was over. The first course seemed to the committee impracticable. In times such as these there was little hope of raising the £40,000 required for the completion of the scheme. The second course presented serious difficulties. They were under certain obligations to the contractors and to others, and the closing down of the work in its present stage would have involved a serious loss and inconvenience, and very probable hurt to the building itself. The committee, therefore, adopted the third course. Every facility was given to the workmen to enlist a certain number of generous churchmen were invited to subscribe the £13,000 needed to complete and safeguard the shell of the building, and the response was so splendid that in a few weeks £8,000 was subscribed, and now only £5,000 more was needed to carry out the project. They were persuaded that the line they had adopted would commend itself to the great majority of the church people of the diocese. When peace came work could be resumed, and the committee were confident that a grateful Church would contribute the comparatively small sum needed to prepare the building for consecration.—The building of the cathedral, his lordship added, had proved a great incentive to church building, and to the building of churches of real beauty.

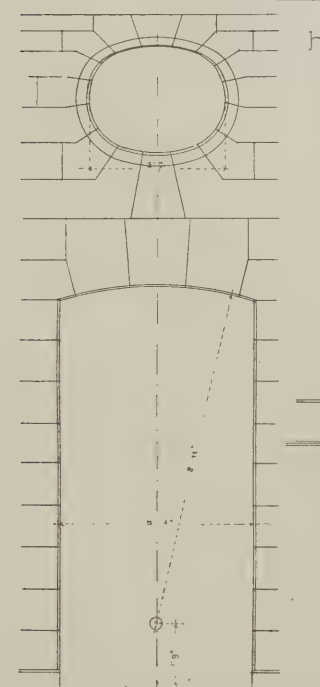
1 FLOOR



THE RITZ HOTEL

HOTEL ENTRANCE AND LOYNGE

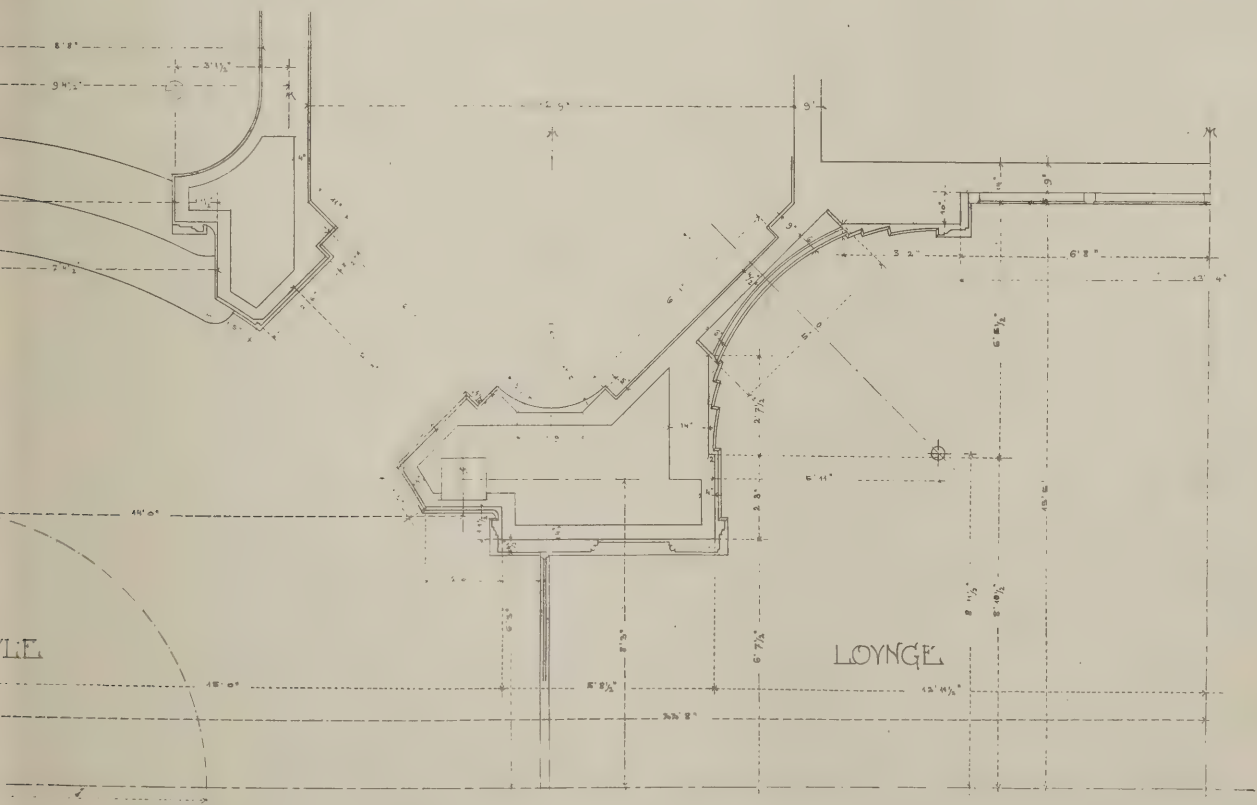
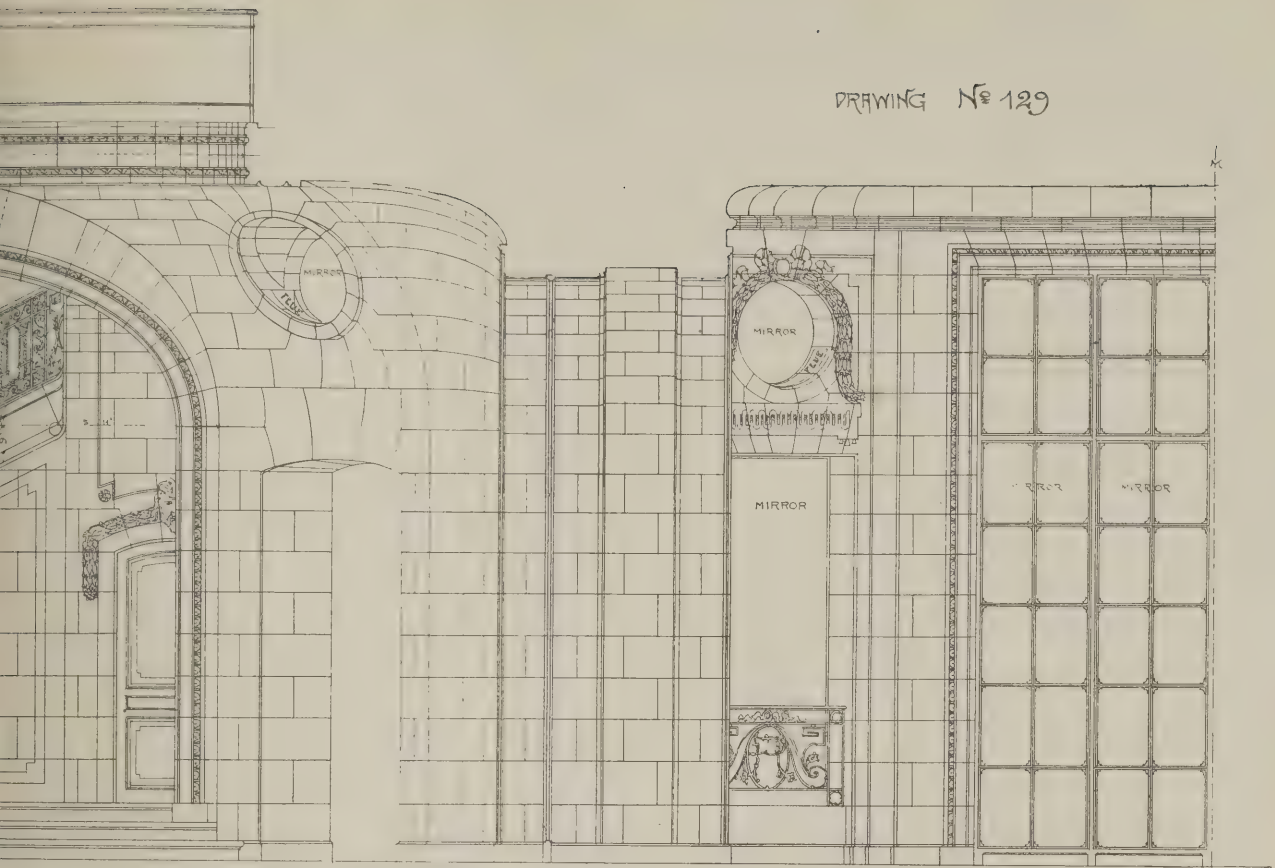
SCALE $\frac{1}{2}$ INCH = TO 1 FOOT



ENTRANCE HALL

NOTE: THE DIAMETER OF OPEN WELL IS 14' 7" AS DRAWN ON PLAN AND NOT AS SHOWN ON ELEVATION

DRAWING N° 129



RITZ HOTEL, LONDON: ENTRANCE AND LOUNGE.
ARCHITECTS.

CORRESPONDENCE.

The Editors disclaim all responsibility for the statements made or opinions expressed by correspondents, who are asked to be brief, and to write on one side only of the paper. Every communication must bear the name and address of the sender.

Pre-War Contracts.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—I have read with considerable interest the account of the meeting of the National Federation of Building Trades Employers, and particularly the speeches and resolutions on the subject of Pre-War contracts.

I rejoice to see, by the final resolution, that the National Federation is to move, and, I trust, quickly, by approaching the Government upon this very urgent and serious question. A very large number of people, not only connected with the building trade, but in all sorts of trades and businesses, are being seriously worried by the position in which they are placed. As the present law stands, they have to bear the whole burden (however grossly unjust) of their inability, attributable solely to the war and to no other cause, to fulfil contracts entered into previous to the war, in a very large number of cases only a few weeks previously—while the other parties to the contract can exact the uttermost farthing, to the utter ruin of a large number of their victims, while they remain comfortable, because no remedy is given by the common law as it has been interpreted by eminent judges in the past, who had never contemplated such a war as we are now engaged in. The condition of affairs created by our "State being at War" has therefore no real effective recognition in the Courts.

I notice that several of the speeches at the National Federation meeting jumped ahead of the main object which should be kept in the forefront of any action taken by the National Federation and Allied Associations—viz., to press the Government to pass a short Bill giving power to the Courts to consider the effect of the State of War upon any case of pre-war contracts brought before it, and to have power to give relief and to do justice as between the parties, as the merits and details of each may in the discretion of the Court require. If this Act is passed, there is no doubt whatever that, rather than face the ordeal of an exposure in the law courts, the oppressive party in the contract would be willing to come to reasonable terms, whereas under the present position (where a contractor or lessee is suffering under an oppressive pre-war contract) he is like Dean Swift's "man in his shirt" against an unreasonable and greedy opponent armed to the teeth, and has no remedy.

The Government are making appeals that everyone is to do the utmost to assist the country and release "men, material, and money for the country's assistance in the prosecution of the war." I know of very many cases where people are prevented from doing all they might in this direction, because of the serious position in which they are placed on account of these pre-war contracts and the responsibilities in connection therewith tying them down to these affairs. . . .

The question is not one of asking the Government to make good losses, but it is a question of giving the right of entry to a court that shall have power to deal with any and every case brought before it upon its merits.

I trust that the National Federation will act quickly in this matter, and press it (on these lines) upon the attention of the Government.

There are numerous cases that can be quoted all over the country of the oppressive state of affairs, not by any fault of the lessees or contractors, but

solely on account of the war, and especially as proceeding with these contracts in most cases means competing with the army and Government for "men, material, and money." Justice and the interests of the country call for immediate remedy.

HOWELL J. WILLIAMS, J.P., L.C.C.

11-17, Bermondsey Street, London Bridge, S.E.

[We have felt it desirable to omit a passage from this letter.—EDS. A AND B. J.]

The Dangers of Dear Freights.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—The very pointed and authoritative criticism of the Government and the shipowners uttered by Sir Corbet Woodall at the recent meeting of the Gas Light and Coke Company makes evident a very real danger to the community with regard to the prosecution of the war, as well from the purely military as from the economic standpoint.

Sir Corbet was making no special plea for gas shareholders or gas consumers as such. They are all willing to bear their share of the inevitable troubles and burdens of the war. What moved him to call public attention to the matter in such strong terms were the following vitally important facts: The enormous increase in the cost of bringing coal by water to the gas works of the country—municipal as well as company—must, if it continues, lead to a serious increase in the cost of gas to the consumer. That would inevitably lead to a reduction in the quantity of gas consumed, and, as the quantity of raw material for the making of the high explosives for our guns depends directly on the quantity of coal made into gas, the direct and certain result of dear freights would be disastrous. Because that is so, and for no petty concern for the profits of shareholders in gas companies—who are, as Sir Corbet mentions, almost alone in suffering reduction in dividends as a result of increasing prices—I would ask you to give the fullest possible support to Sir Corbet's very important contribution to the discussion of this urgent problem.

(MRS.) CLOUDESLEY BRERETON.

British Commercial Gas Association, 47, Victoria Street, Westminster.

[Sir Corbet Woodall's speech we are unable to reproduce. Its purport is sufficiently indicated in the above letter from Mrs. Cloudesley Brereton, to whom it is due to state that her letter has been somewhat abbreviated. It should be read in conjunction with Mr. Runciman's explanation in the House last Thursday.—EDS. A. AND B. J.]

The Shakespeare Tercentenary.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—I understand that certain persons are advocating the erection of a statue in Whitehall in celebration of the Shakespeare tercentenary. Why a statue, and why in Whitehall? An outdoor statue in London is promptly covered with soot and ridicule; and the very name of Whitehall is death to poetry. Besides, there are no adequate or authentic materials for a counterfeit presentment of Shakespeare, to whom the only fitting monument would be a noble memorial theatre. I understand that a fund is in existence for this purpose, but that it is at present inadequate. I would suggest that it should be augmented by the money that well-meaning people propose to waste on statuary. For an immediate celebration, why not have a great memorial performance for the benefit of the fund?

London, S.E.

SPERO MELIORA.

ILLUMINATION DEVELOPMENTS.

(Concluded from No. 1099, page 39.)

The engineering aspects, together with those aspects which pertain to vision, in large part constitute the science of illumination. Aesthetics as comprehended in the principles of design, ornamentation, and decoration may, in a sense, be grouped under the science of illumination, and to the extent that it is so considered it is essentially important. Obviously, however, aesthetics is so much a matter of artistic feeling that the entire subject cannot be classed under this heading.

Artistic Possibilities.

A growing appreciation of the artistic possibilities of lighting and the growing demand for artistic execution in lighting design are gradually introducing more pleasing features, glassware, and lamps. It is one of the gratifying and encouraging features of the situation that there is nothing inconsistent in the requirements of good illumination whether they be requirements of efficiency, ocular hygiene, or aesthetics. It appears that in promoting the one natural impetus is given to one or both of the others. The more efficient light sources are likely to be more brilliant and to carry with them the need for concealment from view. In meeting this need design along the lines of least resistance results in diffused light from larger areas, forming secondary sources which do not disturb ocular comfort. In the design of such systems of lighting, opportunities for the creation of pleasing and artistic effects thrust themselves upon the designer in a manner which was never encountered when less efficient illuminants of lower brilliancy were placed in rooms without adequate concealment.

Within recent years, the art of illumination, conforming to the more careful ascertainment of scientific principles, has assumed much greater complexity than pertained to it a decade ago, and it is now distinctly a matter for the specialist, working in association with the architect. Neither is likely to trespass on the other's domain; for while the architect clearly recognises that the more recondite scientific data are outside his province, the illuminating engineer is equally well aware of his own limitations. In the lighting of interiors, more or less in accordance with established illuminating principles, much experience has been gained and recorded in recent years, and considerable advance in practice has resulted. In the transactions of the Illuminating Engineering Society alone there are more than fifty papers dealing with the illumination of interiors, many of them containing definite photometric data on the results obtained. This experience covers a wide variety of installations, ranging from the illumination of churches and theatres through illumination of stores and factories to the simpler problems of lighting garages and stables.

Interior and Exterior Lighting.

That remarkable advances have been made in the lighting of interiors during the last five years will probably not be denied. Better materials of illumination are available and knowledge of correct principles of illumination has increased rapidly. Experiments in the design of lighting equipment and its installation have sometimes failed to give satisfaction, but usually have given some lesson which has added to the total experience in lighting practice. Developments which in themselves have not achieved permanent

success have in some cases been stimulative, and have promoted the best development of lighting practice.

In the lighting of exteriors there has been some advance also. Street lighting is so largely dependent upon municipal appropriations that its development is sometimes hampered unduly by lack of funds. Merchants' associations have found in street lighting a means of promoting trade, and have had recourse to display street lighting to supplement the lighting provided by the city. Thus, tungsten cluster lighting has been installed in many cities, particularly the smaller cities of the country, with a very beneficial effect upon street lighting as a whole. More recently a competitive form of illumination, known as the ornamental arc lamp system, in which an inverted arc lamp is employed, has commanded much attention and is experiencing notable growth. General civic street lighting is improving slowly, the average standard of intensities being increased, and somewhat better design of the illuminants and systems being noted in the more recent installations.

There is some little development in the way of lighting exteriors of buildings. Outline lighting of expositions was first carried out in a notable manner at the Columbian Exposition in 1893, attaining perhaps its highest development at the Pan-American Exposition in Buffalo in 1901. The Jamestown Exposition struck a new note in lighting building exteriors, and in the Panama-Pacific International Exposition in San Francisco, 1915, a fuller development of the lighting of buildings by concealed sources was demonstrated.

THE RUSSIAN MARKET FOR BRITISH TRADE.

One of the first practical steps taken to stimulate British trade with Russia, and to divert to British concerns the enormous trade heretofore enjoyed with Russia by Germany, is the publication of the "Directory of British Manufacturers for Russian Trade," edited by R. A. Lenski, printed in the Russian language for circulation in Russia.

A year ago various movements were afoot to develop trade relations with Russia but, in the meantime, many such activities have been suspended, a notable exception being that of the compilers of the work referred to, who have steadily pursued their allotted task, with the result that despite the discouraging conditions of the last twelve months, the British manufacturer is now fortified with a comprehensive compendium of his wares presented in the Russian language.

The Directory referred to consists of nearly 400 pages, with trade headings in Russian and English, and with a brief supplement in English entitled "Side-lights on Russia," giving valuable information on Russia's commercial and industrial systems. Lists of equivalent weights and measures are added. It bears evidence of very careful compilation, and has obviously received the support of many representative British manufacturing houses. It is published at 5s. by the Russo-British Trade Exchange Ltd., 16, Regent Street, London, which company also undertakes the furnishing of reports on the standing of Russian firms, the placing of advertising in Russian publications for British manufacturers and shippers, and is in a position to give expert advice in this connection, and generally with regard to Russo-British trade.

SOCIETIES AND INSTITUTIONS

R.I.B.A. Meetings.

We are asked to announce that the general meetings of the Royal Institute of British Architects will in future be held at four p.m., instead of three p.m., as announced in the Kalendar and other publications of the Institute.

Barry Master Builders' Association.

Barry District Master Builders' Association have elected the following officers for the coming year: Mr. S. J. Martyn, president; Mr. H. Fisher, vice-president; Mr. W. Vickery, treasurer; and Mr. P. V. Rendell, secretary (re-elected).

Glasgow Institute of Architects.

At the quarterly meeting of the Glasgow Institute of Architects, Mr. John Watson, F.R.I.B.A., president, in the chair, was reported that the president had been appointed as assessor from the Institute on the examining jury of the Glasgow School of Architecture, in place of Colonel J. B. Wilson, whose term of office had expired. The regulations for contracts for building works in Scotland were fully discussed, and explanations were given regarding certain of the articles. It was agreed that all fellows and associate members who engage apprentices or pupils should notify the secretary, so that the register may be kept.

Faculty of Surveyors of Scotland.

Mr. Alan K. Smith occupied the chair at the annual general meeting of Fellows of the East District Section of the Faculty of Surveyors of Scotland, which was held in Edinburgh on February 11. The report showed a slight increase in the number of members on the roll compared with the preceding year. During the year the Council had been principally occupied with work in connection with national modes of measurement for building trade. The accounts showed a balance in hand of £238 17s. 3d. The report and accounts were adopted. Mr. Thomas Fairbairn was elected chairman and Messrs. G. M. Mitchell and A. K. Smith were elected members of Council.

Architectural Association of Ireland.

Mr. Harold G. Leask, president, occupied the chair at a meeting of the Architectural Association of Ireland on February 10, when Mr. J. White delivered a lecture entitled "Round about the Adriatic." The course of his lecture, which was illustrated by lantern slides, Mr. White described Corfu and the famous forts of the Adriatic coast. Turning to Trieste, he showed views of the great caves of Adria, extending for miles beneath the mountains. From Venice a number of views were shown, including St. Mark. The lecturer gave details of Venetian work in various towns. In Trau, he said, we find to be found the finest examples, as they appeared not to have created work of time, but for eternity. Following the Dalmatian coast line, Spalatro he referred to as associated with the Emperor Diocletian whose palace formed the nucleus of the present city, which has a population of more than 3,000. Mr. White gave an interesting account of Ragusa, one of the great harbours of the Adriatic, which are of such importance to the naval forces of Austria and Cattaro, to which he alluded as the Gibraltar of the Adriatic. In conclusion he described that great triumph in engineering, the zigzag mountain road from Cattaro to Montenegro.

BOOK NOTICES.

Who's Who, 1916.

A peculiarity of "Who's Who" as a reference-book is that it is interesting to read. One turns to it with all the eager curiosity that personal records always inspire; and one can pry into these tabloid autobiographies without compunction, since the particulars revealed are only such as their subjects themselves care to make public. To many the heading "Recreation" seems to be an irresistible temptation to levity. A barrister says he plays at all games except Rugby football and marbles. An author "finds Life so fascinating a game, and everything alive so wonderful, that he needs no so-called recreation. He may take up cards, golf, billiards, theatres, when he is dead and finds things monotonous—not before." It will be a poor business when theatres are "taken up" mainly by "deadheads." One gentleman includes "snake-hunting" among his pastimes. Some have such a long string of recreations as to excite wonder as to whether they have any time for anything else. Architects fly to the opposite extreme. Apparently they are so busy that they have no time whatever for recreation. Professor Beresford Pite, however, confesses to "sketching," thereby acknowledging no more violent detachment than that of the eminent actor whose recreation is "seeing plays." In praise of "Who's Who" as a work of utility it would be superfluous to speak. It is indispensable to every library, public or private; and this is its sixty-eighth year of issue.

"Who's Who, 1916." An Annual Biographical Dictionary, with which is incorporated "Men and Women of the Time." Sixty-eighth year of issue. Published by A. & C. Black, Ltd., 4, 5 and 6, Soho Square, London, W., price 15s.

"The Year's Art."

Always an interesting feature of this delightful annual, of which this is the thirty-seventh issue, is the review of the last year by the editor, Mr. A. C. R. Carter, and on this occasion the writer's bright and breezy style has not forsaken him. He has, of course, a great deal to say about the doings and sufferings of artists in relation to the great war. "As a class," he truly says, "artists and art workers can claim a great share in every national effort of service," and the suspension of the summer exhibition of the Royal Academy "would have been an additional blow to a profession which has suffered grievously." There is no difficulty in agreeing with Mr. Carter that the authorities acted wisely in deciding to have no break on account of the war, and to omit nothing but the banquet. He expresses the fear that as taxation grows more burdensome, art treasures will leave the country in greater numbers than ever before. As expressive of this tendency he recalls "a grim joke to the effect that the British Government was gravely entertaining the project of selling the contents of the National Gallery in aid of war finances." This joke, he says, "was seriously treated in some American journals in 1915, and the division of the spoils was calmly calculated." It is easy to imagine with how great an avidity such of the American journals as are controlled by Germans would seize upon this ridiculous *canard* as evidence of Great Britain's financial straits.

Two beautiful portraits of Madame Turgot le Brun are among the dozen or so of plates included in the volume, which contains a compact diary, descriptions of the art institutions in the metropolis and

the counties, a glance at foreign and colonial art institutions and schools of design, a list of the principal art sales of 1915, a list of engravings and etchings published last year, a list of fine art dealers, a long roll of artists serving with the colours, a directory of artists and art workers, an obituary of the year, and much other valuable and interesting information.

"The Year's Art, 1916." A concise epitome of all matters relating to the Arts of Painting, Sculpture, Engraving, and Architecture, and to Schools of Design which have occurred during the year 1915, together with information respecting the year 1916. With full-page illustrations. Compiled by A. C. R. Carter. London: Hutchinson & Co., 34, Paternoster Row.

Rural Labourers' Cottages.

Mr. W. I. Chambers, architect, has issued a booklet in which he not only discusses in racy style the vexed question of providing rural labourers with suitable dwellings at a reasonable cost, but also draws from his own long and extensive study and experience of this class of work a considerable collection of valuable practical data. His general conception of the subject being fundamentally sound, he naturally lays particular stress on planning. Avoiding all controversial points as to whether desirable cottages can be erected at a price to pay a remunerative interest on money expended, and all other debatable matters, he addresses himself exclusively to the elucidation of the problem of developing the most desirable plan of a labourer's cottage. Realising that in a cottage not an inch of space must be wasted, he insists that space occupied by passages is an evidence of incompetent or thoughtless planning, but he would tolerate a small lobby at the entrance door to screen living rooms. This provision, indeed, we should, for our part, regard as essential, as much in the interest of privacy as of comfort, health, and cleanliness. Where the street door opens directly on to the living-room, all these conditions are flagrantly violated; but certainly the small lobby may be accepted as a fair compromise. "Cottages for working people," he contends, "should be plain, homely, substantial, and, above all other considerations, suitable; there must be no pretentious suggestions of a miniature villa, no straining for picturesque effect, but a comfortable homelike dwelling, suggesting rural peace and rest." This is sound doctrine, and the author works it out in detail in his text, and justifies it in his elevations and plans. His advice to estate owners is worth quoting: "Build well or not at all; do not bequeath to your heirs rickety houses that will furnish everlasting grounds for complaints of occupiers, appeals to the pockets of owners for cost of repairs, and be a general nuisance to the estate; they are as pernicious to home-builders as quack medicine is to health." When you finally make up your mind to erect cottages, select a respectable architect and be guided by his advice.

There is no question as to the value of this booklet to all who are interested in cottage building. It is priced at one shilling, and the author states that, owing to the war, he has decided to issue it privately and will send a copy post paid on receipt of a postal order addressed to W. I. Chambers, 18, Whitcomb Street, London, W.C.

Key to the London Telephone Directory.

We have received from Messrs. W. H. Smith and Son, 24, Norfolk Street, Strand, W.C., a copy of the new issue of a "Key to the London Telephone Directory," price 5s. net. This is a very useful—indeed, a

very necessary—publication, rendering a most important service to users of the telephone. It happens with annoying frequency that one is unable to attach a postal address to a known telephone number, and one might search for it in vain for a month in the "Telephone Directory." Of course, it is there, right enough; but in which of its 876 double-columned pages? That is the difficulty, and to try to find it would be a hopeless task but for this index, which will get it for you in something under a minute. To give a concrete example. You know that the offices of THE ARCHITECTS' AND BUILDERS' JOURNAL, of the "Architectural Review," and "Specification" are assigned the telephone address "Victoria 6936," but you have forgotten the postal address. You look at the 'phone directory under "A" and "S" and find no clue; and you have forgotten the title of the firm. What is to be done? Ring them up. But it is Sunday, or Bank Holiday, or after office hours, and you particularly want that communication to reach them by the first post. Referring to the "Key," you look under "Victoria Exchange" for No. 6936, and are referred for that number to the first column of page 766 of the Directory, where you find us entered as "Technical Journals, Ltd., 27-9, Tothill Street, S.W." Q.E.D. One could imagine occasions when this "Key" would be in one sense like that which the architect presents to the mayoress at the opening of the new town-hall—worth its weight in gold.

NEW BISHOP'S THRONE IN
BRISTOL CATHEDRAL.

In the early part of last year the Dean and Chapter of Bristol Cathedral decided to appeal for subscriptions for a new throne, more in keeping with the restored choir, and more worthy of the church. The design prepared by Mr. Roland Paul, F.S.A., was accepted, and a gentleman donor—who desires to be anonymous—offered to defray the entire cost of the work. The new throne, which has just been dedicated by the Bishop of Bristol, occupies the same position as its predecessor. It has been executed in English oak, from the architect's designs, by Mr. W. H. Saunders, of Cirencester, to whom credit is due for the excellence of the workmanship throughout. The total height is twelve feet, and the details of the cornice over the "tester," and of the panels in front of the Bishop's bookboard, have been designed to harmonise with the ancient work on the stalls. A seat for a chaplain is provided in front of the throne, the ends of the bookboard being ancient ones reused. On the panels of the Bishop's bookboard are the date and the initials of the Bishop; on a shield at the side are the arms of the Bishop, impaled with those of the See; on a corresponding shield are the arms of the Province of Canterbury. Immediately above the seat is an inscription, "Sedes Episcopatus Bristollensis," and over this, in the centre panel, are the arms of the See, coloured and gilt, surmounted by a mitre. The ceiling, partly a "cove" and partly a "tester," is supported by six groups of pinnacles and buttresses, with open tracery between, the whole finished with an elaborately carved cornice and cresting. A small fragment of old carved cresting, which was preserved and worked up in the former throne, has been fixed at the springing of the coved ceiling. The chaplain's seat is raised one step above the marble pavement; the throne four steps.

NEWS ITEMS.

Waterproofing Hospital Balconies.

A leaking balcony leads to many complaints. To avoid this possibility the balconies at the New Chelsea Hospital for Women have been constructed with Puddled cement concrete.

Stockport Grammar School Extension.

New buildings at the Stockport Grammar School at Davenport have just been completed from designs by Messrs. R. H. Spalding and E. G. Theakston, of London, at a cost of £37,000 (including the playing fields, covering ten acres).

Cement Export from Germany Prohibited.

The German Government has now issued a prohibition against the export of Portland cement. All contracts with Dutch firms have thus been annulled, as was the case with aniline dyes and iron. The German Government does not, of course, intend absolutely to prohibit the export of cement, but to facilitate the making of new contracts at much higher prices, calculated in Dutch florins.

Reconstruction of a West-End Cinema.

We are informed that the "Pikes" Cinema in Charing Cross Road (recently destroyed by fire) is about to be reconstructed. The interior is to be entirely remodelled, with new balcony and boxes. The fibrous plaster work and decorations have been placed in the hands of John Tanner and Son, and the building when completed will be one of the handsomest of West-End cinemas. The architect is Mr. F. Edward Jones.

"B.R.C. Fabric."

With reference to the double-page advertisement of the British Reinforced Concrete Engineering Co., Ltd., 1, Dickinson Street, Manchester, which appeared in our issue of February 9, pages x and xi, we are informed that, owing to a clerical error, the name of the architect for the Danum Hotel, Doncaster, was incorrectly stated; the name should have been P. Robinson, Esq. The illustration of this hotel is the midmost of the seven blocks shown in the first column of page xi.

The Australian Commonwealth Building in the Strand.

In this building, which is now well advanced towards completion, an endeavour has been made to render the building characteristic of the Commonwealth by using for the more decorative portions of the structure as many native products as possible. The marbles for the interior walls come from Victoria and New South Wales, while the many hard woods that are grown in such profusion in Australia are to be employed for the flooring. These include cedar, satin, and black bean, the last-named so closely resembling oak that the two are frequently mistaken for one another. The exhibition hall on the ground floor will be in itself one of the best exhibits, with its walls and floor of Australian marbles. The terms of the contract require that the building shall be ready for occupation by November next, but the date of the formal opening is still undecided.

New Cathedral for Uganda.

The foundation-stone of a new cathedral in the capital of Uganda, in Central Africa, has been laid by King Daudi Chwa. The Governor of Uganda, Sir F. Jackson, took part unofficially. This cathedral will be the fifth which the Buganda Christians

have built on Namirembe ("The Hill of Peace"). The first was erected in 1890; the second, a great building of forest poles to accommodate 5,000 people, built in 1892, was blown down by a great gale of wind in 1894; the third was at once commenced, and was finished the following year—an enormous structure with walls of reed. In 1901 that showed signs of decay and was pulled down; and the fourth, a substantial building of brick, was commenced in 1902 and consecrated in 1904. This was struck by lightning in 1910 and burnt to the ground. Hence the necessity for this new building, which it is estimated will cost £30,000.

Buckie Harbour Extension.

The authorities for the Buckie Harbour extension scheme, upon which £250,000 has already been spent, have been informed by the Treasury that upon the report of the Development Commissioners the Treasury are willing to grant the application of the Buckie Town Council for variation of the conditions attached to the advance promised from the Development Fund and for a further loan for the completion of the harbour extension works. The modified scheme now sanctioned by the Treasury will enable three new basins of the harbour to be completed, and will give access to and the use of the fourth basin so far as it can accommodate fishing vessels without further excavations. The additional cost sanctioned is £40,000, bringing up the amount of the modified completed scheme to something like £160,000, of which there is yet to expend about £26,000.

Wallasey's New Town Hall.

The Mayor of Wallasey (Alderman Sidney S. Dawson) and several other members of the Council assisted at the ceremony of placing in position the ornamental top of the tower of the new Town Hall. This is in the form of a copper urn seven feet high, four feet in diameter, and weighing three hundredweight. A sealed bottle containing copies of the Liverpool and Wallasey newspapers, a number of coins, and a record of the event was placed inside the urn by the Mayor, who said he did this in the name of the inhabitants of Wallasey, on whose behalf he congratulated the builders in having progressed so far with that magnificent building in spite of the difficulties they had had to encounter. The crane chains were then attached to the massive urn and it was hoisted into position 150 ft. from the ground and nearly 200 ft. above the promenade level.

BRITISH INDUSTRIES FAIR, 1916.

Memorandum of Information for Buyers.

Date and Scope of the Fair.—The fair will be held in the buildings of the Victoria and Albert Museum, South Kensington, London, S.W., and will be open to the trade alone from February 21 to March 3, 1916, both dates inclusive. It comprises the following trades: Toys and games, earthenware and china, glass, fancy goods, stationery, and printing.

Catalogues.—A catalogue of manufacturers exhibiting at the fair has been issued, and contains a plan of the exhibition, showing the exact position of each exhibitor and information as to the best means of reaching the museum from various parts of London. This catalogue will be supplied free to foreign buyers, with their tickets of admission.

Tickets of Admission.—Tickets of admis-

sion to the fair will be issued to bona-fide buyers on application being made either at the entrance to the fair or to the Director British Industries Fair, 32, Cheapside London, E.C.

Facilities at the Fair.—The Board of Trade will provide inquiry rooms, at which official interpreters will be available and general information supplied. Postal telegraphic, and telephone facilities will be provided within the exhibition, as well as refreshment, writing and smoking rooms.

Smoking.—Smoking is strictly prohibited, except in rooms specially set apart for that purpose.

THE DESTRUCTION OF SOISSONS CATHEDRAL.

The following despatch has been received from Mr. H. Warner Allen, special correspondent of the British Press with the French Armies:

Of all the sad sights in Soissons, no sight is sadder than the cathedral. For its destruction the Barbarian can put forward no excuse. Its tower could never be used for observation purposes, since the French hold hills on the bank of the Aisne which afford an infinitely better view of the German lines. It has been destroyed deliberately and devilishly for destruction's sake. The cathedral of Soissons, with its perfectly proportioned interior, was a thing of beauty, and the German needed no other reason for destroying it. To his hideous glee the Hun has discovered that it is built of soft, crumbling stone, on which his shells can produce the maximum of effect every flying splinter of steel bites deep into the very heart of the blocks which once were so nobly shaped to enshrine the majesty of the builder's faith. Long ago two arches in the west end, just in front of the organ, collapsed, opening a great breach in the roof. But even though several other columns had been damaged and the whole edifice seriously endangered the German was not content with this partial mutilation. One day there appeared in the German communiqué a vague, concocted lie, accusing the French of using the Red Cross flag at Soissons. The object of the lie was clear. The Germans were providing themselves with an excuse for finishing off the mutilated cathedral. Shells once again began to hail on the devoted edifice.

Not long ago four more arches collapsed with the roof, and now more than half the beautiful building is beyond all hope of repair. There is a great breach in the walls, through which one can see isolated buttresses and lumps of masonry balance fantastically against the sky. Overhead the bare skeleton of the rafters and the laths of the roof is outlined black against the light, like the pathetic ribs of a body left to rot ashore. There is scarcely a pane of glass intact in the painted windows, and the air is melancholy with the faint clicking of morsels of glass on against the other, as, still held in the leaden frames, they swing to and fro in the wind, with the crying of the jackdaws and the occasional crash of a stone falling headlong from the walls on to the debris below.

Yet with it all the cathedral seems to hold itself bravely, hiding the wounds that it has suffered nobly in the great battle. Right against Wrong, and even though it is stricken to the death it awaits with unflinching confidence of its builders' faith the ultimate end of things, the inevitable victory of the cause for which it stands.

INSTALLING THE ALL-GAS KITCHEN RANGE.

In a paper read before the London and Southern District Junior Gas Association, Mr. W. L. Westbrook gave some interesting details of the installation of an all-gas kitchen range.

When, he said, the first illustrations of combined gas-ranges appeared in manufacturers' catalogues some few years ago, the idea of ousting the kitchen range at once appealed to the writer. But the high initial cost of the apparatus, and the inaccessibility of the units for cleaning and repairs, were obstacles to the development of the idea. It then suggested itself to arrange a combination of cooker, boiler, and fire from apparatus already on the company's hire or hire-purchase list, pull out a kitchen range, and fit them in its place. The consent of the company's engineer having been obtained, and an order secured from a progressive consumer who was anxious to save labour and time in the van of progress, the first installation was put in hand and duly completed in December, 1913. It has proved satisfactory to both consumer and company. Many other complete installations have since then been fitted—some in new houses on order, and others in place of coal-ranges. In addition, a large number of coal-ranges have been put out of action by fixing a gas-fire in front of the fire-bars and sealing-up same.

The ease of control of the gas-cooker is well known to the housewife; but the efficiency of the gas-boiler and the working of the thermostat preventing waste of fuel and maintaining a supply of really hot water available at any moment required, at small fuel cost, is a revelation. All fuel consumption ceases the moment there is no further need for it; and you have no ashes to clean up after, and no "field day" once a week cleaning flues—no say nothing of periodical visits from the sweep.

The gas-fire successfully deals with the question of warming the kitchen in winter and airing clothes. It should be fitted with a fire-guard.

In our first installation the method of carrying out the work was as follows: The hot-water system was drained, and the old coal-range and boiler pulled out by the builder; the flow-and-return pipes being cut off at a convenient point above the boiler. The opening was then enlarged to the size necessary to accommodate the new gas apparatus, the fitter in the meanwhile being employed in running the gas supply. The estimated maximum consumption being about 160 cubic feet per hour, a 1-inch supply-pipe was laid from the meter under the kitchen floor across the front of the range opening; a $\frac{3}{4}$ -inch branch across the floor in the centre of the opening supplied the cooker; and another 1-inch pipe from the end of the 1-inch pipe was extended up the centre of the right-hand jamb to the level of the boiler connection—the pipe being chased-in and $\frac{3}{4}$ -inch by $\frac{1}{4}$ -inch centre tee left at the correct level for the fire connection. The joints were then plugged; and the work being tested by pressure-gauge, the floor boards were relaid. To support the boiler, two pieces of $\frac{3}{4}$ -inch iron barrel were let into the brickwork at the back of the opening, and fitted with front legs with flanges at the bottom, to ensure a good steady bearing. This stand was so arranged that the base of the boiler should be just above the top of the fire; the latter being raised on a shaped wood stand covered with sheet iron, so that the top was level with, and

formed a continuous line with, the crown plate of the cooker. The legs of the boiler-stand were sufficiently wide apart to allow the flue from the fire to pass between them.

The cooker and fire were placed in position temporarily, and packed-up to the correct floor-level, in order to get the measurements for the flue-pipes, which have to be specially made for the job. In the first installation, however, this only applied to the flue from the fire, which was made with an obtuse elbow at the back; the flue being chased-into the brickwork flush, and supported by straps. The boiler was then placed in position, temporarily packed to the correct level, the flow-and-return pipes fitted, and the cooker connected-up *pro tem*. A $1\frac{1}{4}$ -inch by $\frac{1}{4}$ -inch iron bar drilled to take $\frac{3}{8}$ -inch bolts at intervals of about 1 foot was let into the brickwork at the top of the front of the opening, to support the adjustable register.

The whole of the apparatus was now disconnected and removed, and the floor, sides, and back of the opening rendered with cement, and the chasings stopped. This work completed, and the cement thoroughly set, everything was in readiness for the final stage of the work. The cooker was now permanently connected; the oven supply pipe having been first altered from the right to the left hand side. As the opening in this case was only 39 inches wide, it was necessary to fix the fire right up to the cooker, to keep within the available space. A $\frac{1}{2}$ -inch iron plate was now fitted on top of the boiler stand; and the left side of the plate was bevelled off to nothing and took a bearing on the crown plate of the cooker—being cut to fit round the brackets. The back and right-hand sides of the plate were fitted close up to the brickwork, and the front edge turned down at a right angle, about 1 inch, to form a level bearing for the back of the fire, which was securely screwed to same. This arrangement entirely closed the whole space on the right of the cooker in addition to making a good stand for the boiler, which was now finally lifted into position, and the flow-and-return pipes, flue, and gas connection fitted.

As arranged, in order to save the cost of tiling, the opening was now lined with sheet iron, which was fitted so as to form a continuation of the front and side walls of the boiler, and entirely encased the boiler connections, flue, etc. The flue from the oven of the cooker and the register having been fitted, and the gas supply connected to the fire, a coat of aluminium paint on the lining completed the job. As may be gathered from the description given, a good deal of scheming and difficult fitting was necessary; and several unforeseen obstacles had to be tackled before we were assured of success.

Our later improved installation, with the boiler standing on a tiled brick pier through which passes the flue of the fire, is much easier to fit, and also a much better job, than the close grouped installation; the only advantage of the latter being that it can be fitted in small openings. The method of fixing is substantially the same, except that the sheet-iron lining and boiler stand are dispensed with; the gas supply being arranged exactly as before. Both the oven and fire flues are at the back of the tiling, and are oval in section, to economise space. They are extended about 1 foot above the register; the tops bevelled off from front to back; and the back portion bent forward to an angle of about 135 deg. to prevent any loose mortar falling into the pipes. The cooker flue pipe is terminated at the

lower end by a rectangular box about 1 foot long by 6 inches wide. The lid of this box is fitted outside the tiling, and carries the pipe connecting with the nozzle of the cooker; the bottom of the box being open to serve as an anti-down blow and cleaning door, and incidentally to prevent too great a pull and consequent loss of heat from the oven. Another advantage of the box is, should it become necessary to exchange the cooker, any variation in the height or shape of the flue can be met by fitting a new lid, and so save disturbing the tiles. The dimensions of the opening necessary for this installation are: Width 4 feet, depth 2 feet, height 5 feet. The 4 feet will allow ample room for cleaning on both sides of the cooker.

I am glad to say that, up to the present, complaints in respect of these installations have been practically nil; but there were one or two minor troubles which had to be dealt with and overcome that may prove of interest. I may mention that, from a hygienic point of view, the arrangement is, in my opinion, a great advance; the whole of the products of combustion from the cooker, fire, and boiler passing away cleanly into the chimney, in addition to the greasy vapours given off in the process of cooking. The adjustable opening in the register above the hot plate of the cooker proved very successful in dealing with the waste gases from this source.

It will be understood that the foregoing description is chiefly interesting as an account of the first approach to a practice that has been since developed and improved.

Geometry for Architects and Builders.

Before the Royal Technical College Architectural Craftsmen's Society, Glasgow, on February 25, Mr. James S. Boyd, Licentiate R.I.B.A., will read a paper on "Practical and Descriptive Geometry for Architects and Builders."

Church Extension, Enfield.

The Bishop of London has consecrated the western extension of the Church of St. Stephen, Bushhill Park, Enfield. This church, the first portion of which was erected in 1907, is built of Stamford stone, to the design of Mr. J. S. Alder. The new portion consists of a lengthening of the nave with a corresponding addition to the aisles, a baptistery, porches, and the lowest stage of the tower. The seating accommodation is 750. The church stands prominently at a bend in the main London and Enfield Road.

Sand-Lime Bricks in the United States.

The American sand-lime brick manufacture was started in the State of Michigan in 1901, and was almost at once boomed throughout the United States. By 1903 the number of such works in the United States had risen to seventy-six, by 1907 to ninety-four. Then a general decrease set in; in 1914 only sixty-two works were actually producing, and the value of the production, which had totalled \$1,225,759 in 1907, was down again to \$1,058,512. There had been a good deal of fluctuation, and new works had frequently been installed in districts where raw materials, proper transport facilities, or technical skill were wanting. At present the industry is on a firmer footing and ordinary bricks for building purposes are mainly being made, whilst originally window-sills, trimmings, columns, capitals, and ornamental pieces for gardens and lawns were considered the most promising products. The States of Michigan, Wisconsin, and New York are now leading in this industry.

PUBLISHER'S ANNOUNCEMENT.

THE question of the cost of Advertising is governed entirely by the circulation of a publication. The prices for small Advertisements enumerated below are framed upon the lowest possible basis in order to allow the use of the columns of the Journal for "Wants," &c., at a figure well within the reach of everyone.

Advertisers are purchasing the circulation of a paper in buying space for their announcements, and we are able to announce that "The Weekly Nett Sale of The Architects' and Builders' Journal is larger than that of any other Architectural Journal."

Appointments Wanted.

4 lines (about 28 words) 1s. 6d.: 3 insertions, 3s.

CLERK of Works, just finishing job, open to another engagement, or as General Foreman. Town or country. References given.—Address, Wm. Chas. Lee, 12, Somerset Road, West Ealing. 754

ARCHITECT and Surveyor's Assistant disengaged; twenty-five years' experience; design, details, surveying and levelling; used to control of office staff.—Licentiate, 23, Wallingford Avenue, North Kensington, W. 746

ARCHITECTURAL Assistant (over military age) desires engagement; good, varied experience with London firms; moderate salary.—Box No. 744.

ARCHITECTURAL Draughtsman is open to engagement or to receive commissions; interiors, perspectives, details; scale models interior or exterior.—Apply Box 745.

BEAUX ARTS (Paris).—Architect undertakes show drawings, water colours, pen and ink perspectives for Academy or competition; designing interiors, elevations, decoration, public, commercial or domestic buildings, flats; long Paris, Swiss, and London experience; excellent testimonials.—V. Hagopian, 12, Belsize Park-gardens, N.W. 759

BUILDER'S General Clerk desires appointment; experienced in accounting, book-keeping, prime costing, and other office work; good credentials.—John M. Fife, 19, Campden Street, Kensington, W. 760

BUILDER'S General Foreman seeks engagement; carpenter and joiner by trade; good draughtsman and manager of men; age 34 years; used to new or alterations; large or small; town or country; good references, etc.; able to get work out at competitive prices; wages moderate; distance no object. Foreman, 1, Batoum Gardens, Shepherd's Bush, W.

BUILDER and Decorator's Estimating and General Clerk desires re-engagement; permanent or temporary; life experience; well up in all branches; good references; not eligible.—S., 12, Cressida Road, Upper Holloway, N.

CLERK of Works, just finishing in City, seeks another appointment; town or country; or as Builder's Foreman; references to first-class architects.—Wm. Chas. Lee, 12, Somerset Road, West Ealing.

CONTRACTOR'S Timekeeper or Sub-Cashier seeks re-engagement; eighteen years' experience on public works; well up in abstracts, prime cost; good references; abstainer.—H. Glibbey, 53, Harwood Road, Fulham, London, S.W.

FOREMAN or Overseer seeks berth; thoroughly competent; above military age; life experience in all branches of the building trades; good manager of men; free at once.—Box 692.

GENERAL Foreman seeks re-engagement; smart and energetic, with eighteen years' experience on competitive jobs; schools, offices, factories, and Government contracts; first-class references; trade, carpenter and joiner; age 42.—S., 46, Pemdevon-road, West Croydon.

GENERAL Foreman disengaged; age 49; carried out jobs in London and country; good references; 17 years one large firm; life abstainer; carpenter by trade; town or country.—H. J. B., 10, Carlton Road, New Southgate. 736

MACHINIST wants job; can work spindle (French or block), tenoning, mortice, planing, etc.; make cutters and sharpen saws.—Machinist, 38, Cottage Grove, Southsea, Hants. 747

PAINTER, Paper Hanger, and Decorator; estimates free; a trial solicited; specifications receive prompt attention; new work a speciality.—G. Morgan, 31, Sparrow Hill, Loughborough. 739

THE Association of Builders' Foremen and Clerk of Works, 56, Old Bailey, E.C.—Experienced Foremen and Clerks of Works can be obtained by applying to the Secretary, Mr. J. W. Sawyer, 214, Clapham Road, S.W. Competent foremen and clerks of works are invited to join this Association.

YOUNG gentleman, "ineligible," desires engagement with architect and surveyor; or would take work in estate office; highest references.—"Tyre," Box 750.

Miscellaneous.

6d. per line.

FOR sale, quantity of good old stone tiles.—Deacon Bros., Kington, Herefordshire. 756

WANTED the following second-hand wood-working machinery, must be in good order and modern:

- 1 4-cutter, to take 4 in. or up.
- 1 circular saw bench to cut up to 11 in.
- 1 circular saw bench to cut up to 6 in.
- 1 cross-cut saw.
- 1 Dimension saw bench.
- 1 tenoning machine.
- 2 boring machines.

—State prices and full particulars to Box 758.

WANTED print of the London Building Act of 1774 and 1844, either original publications or in text book.—Write "D.", 302, Brownhill Road, Catford. 755

TO ARCHITECTS COMPETING.

SCHEMES AND ESTIMATES FOR ENGINEERING WORK.

(Lighting, Heating, Ventilation, and Sanitation), and Architectural Metal Work, supplied free of charge of **STRODE AND CO., Ltd.**, 48, Osnaburgh Street, London, N.W., and 18, Easy Row, Birmingham.

ARCHITECT and Surveyor's business for disposal; established twelve years, near Rosyth Dockyard. Proprietor accepted Government appointment. Office fittings at mutual valuation.—Apply, Robertson, Architect, Inverkeithing. 751

TYPEWRITING; architects' and builders' specifications, quantities, reports, etc.; testimonials copied; prompt, cheap, and accurate; send for price list.—Address, "Typist," Typewriting Office, 65, Marsham Street, Westminster. 753

SECOND-HAND Optical Mart

For the Purchase and Sale of **LEVELS, THEODOLITES, DRAWING INSTRS.**—Clarkson's, 338, High Holborn, London, W.C. (Opposite Gray's Inn Road).

Auction Sales.

9d. per line.

In Bankruptcy.—Re Alfred Grace (trading as H. and E. Lea).—By Order of the Trustee.

HAMMERSMITH.—The whole of the VALUABLE STOCK, PLANT, and MACHINERY of a BUILDER, CONTRACTOR, and SAWMILL PROPRIETOR, comprising well seasoned timber, prime Honduras and Cuba mahogany, Rangoon teak, walnut, American and wainscot oak in logs, planks, and boards, white-wood, pitch-pine, yellow and white joinery deals, boards, battens, scantlings, quartering, flooring, matching, mouldings, beadings, stacks of useful timber and hardwood, 1,500 gross Nettlefold's wood screws, nails, ironmongery, sheet lead, baths, new and S.H. doors, frames, and sashes, partitioning, fencing, 200 new pastry trays and quantity of parts. Building materials, bricks, roofing slates, slate slabs and tanks, marble, sinks, drain goods, S.H. rolled and plate glass, about 10 tons of wrought and cast scrap iron, about 25 tons of R. S. joists. The building plant includes scaffold boards, poles, cords, putlogs, barrows, tanks, wheeling planks, poling boards, ladders, steps, trestles, painters' boats, 2-ton derrick by J. Keighley. Portable railway, die square, hoisting crabs, hoisting tackle, Well's patent light, fifteen benches, two hand mortising machines, mitre trimmer. The modern wood-working machinery, by J. Sagar and Co., comprises two vertical spindle moulding machines, planing and thickening machine, circular and band saw-benches, emery grinding machine, a 14-h.p. Crossley's Otto gas-engine, shafting, belting. Office furniture, writing-table, nest of plan drawers, chairs, and numerous effects, which will be SOLD BY AUCTION by Mr. H. W. SMITH, at CAMDEN WORKS, Great Church Lane, Hammersmith (adjoining Borough Council Depot), on TUESDAY, FEBRUARY 29, and FOLLOWING DAY, at TWELVE o'clock precisely each day.—On view the day prior. Catalogues from Messrs. BOURNER, BULLOCK ANDREW, and Co., Chartered Accountants, Bush Lane House, Cannon Street, E.C., and at the AUCTION OFFICES, 6, Great James Street, Bedford Row, W.C.

Appointments Vacant.

6d. per line.

ARCHITECTS' WAR COMMITTEE.

The object of the Professional Employment Committee is to provide temporary paid work for British Architects who are entirely dependent upon their profession for their living, and whose present difficulties are due entirely to the War. Applications can only be considered from architects who are ineligible for military service and unable to undertake Munition work or other forms of War Service.—Enquiries should be addressed to the Honorary Secretary of the Committee, at 28, Bedford Square, London, W.C.

ARCHITECTURAL Draughtsman (ineligible military service) required for work on public building in Scotland; must be well up in preparation details.—Apply, giving particulars of experience required, and references, Box 757.

YOUTH wanted as Pupil Apprentice to draughtsman's office; furniture and decorative design taught; must have some knowledge of drawing three years' term; salary; no premium.—Apply letter, stating age, etc., to Gill and Reigate, Ltd. 73-85, Oxford Street, London, W.

Contracts Open.

9d. per line.

THE ROYAL BOROUGH OF KENSINGTON SEWER WORKS.

The Council of the above Borough invite TENDERS for the CONSTRUCTION of the following SEWERS and the carrying out of WORKS incident thereto:—

130 ft. of 3-ft. 9-in. by 2-ft. 6-in. BRICK SEWER in BARLBY ROAD.

160 ft. of 18-in. PIPE SEWER across LADBROG GROVE, by Elgin Crescent.

Drawings and specification can be seen at the OFFICE of the BOROUGH ENGINEER, Town Hall, Kensington, W., and forms of Tender obtain therefrom.

Parties Tendering will be required to make declaration that they pay the rates of wages & observe the hours of labour recognised by associations of employers and trade unions and in practice obtained in this district in which the work is to be executed.

Tenders, sealed and endorsed "Tender for Sewer Works," must be delivered at the OFFICE of the undersigned not later than TWELVE o'clock NO on MONDAY, the 6th day of MARCH, 1916.

The Council do not bind themselves to accept lowest, highest, or any Tender.

Each Contractor will be required to enter into written Contract, and, if required by the Council to provide two good and sufficient sureties for due performance thereof.

The Contract deed in each case will be prepared at the expense of the Council.

(By Order)

WM. CHAMBERS LEETE,

Town Hall, Kensington.

February 8, 1916.

Educational Announcements.

COURSES OF PREPARATION.

In Class, by Correspondence, or in Office, for the Examinations of

THE SURVEYORS' INSTITUTION.

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THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, March 1, 1916.

Volume XLIII. No. 1104.



CARVED KEYSTONE ON HOUSE AT QUEEN ANNE'S GATE, WESTMINSTER.

DETMAR BLOW AND BILLEREY, ARCHITECTS.

THE ARCHITECTS' & BUILDERS' JOURNAL.

MARCH 1, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1104.

EDITORIAL.

APPARENTLY the American Institute of Architects is out hot-foot for reform. Its Journal for February, which is just to hand, has for chief feature an article bearing what Mr. Arnold Bennett might call the intriguing title "Our Stupid and Blundering National Policy of Providing Public Buildings." Imagine the official organ of our own sedate and dignified Institute running amok in this hearty and downright style! On the whole, one is glad to think that with the R.I.B.A. such a wild outburst of plain speaking is impossible; because, though "fine words butter no parsnips," the Kingdom of Heaven is not taken by violence, and the habitual bland urbanity of our official utterances is often more effectual than mere blatancy could be. It was an American writer—the late William Wetmore Story, the sculptor—who, in his "Conversations in a Studio," pleaded for some middle course between the extremes of colloquialism and fine writing. "The literary class," he says, "formerly was small and select. Nowadays everybody writes and prints. At the close of the last century the distinction between writing and speaking was very great, and the literary style for the most part was conscious, artificial, and laboured. Now we have gone to the opposite extreme of carelessness, and phrases which scarcely can be tolerated even in speech are thought worthy of print. Foreign idioms and slang are accepted and adopted to the exclusion of the staid graces of the old English tongue." If there is no foreign idiom or slang about "stupid and blundering," neither is the phrase vividly illustrative of the "staid graces"; the expression is merely blunt.

It is amply justified in fact, if not in taste; for the writer of the article, Mr. Charles Harris Whitaker, makes out a strong case. He shows about forty photographic views of the various—not to say miscellaneous—buildings in which Government departments are housed in Washington. For these more or less unsuitable buildings the Government is paying an annual rent amounting in the aggregate to six hundred and four thousand dollars—more than a hundred and twenty thousand pounds sterling. This can be no serious drain on the national resources, and the author lays no great stress on the amount, although it is a good deal too much for the accommodation, and in most instances it does not include "heat, light, elevator, or janitor service." Waste also occurs through the scattering of the houses; for, as the writer remarks, "any business man knows that he could not conduct his business in fifty small plants as economically as he could conduct it in one, where the problems of operation could be systematised and

centralised." Probably the argument for economy and expediency, the exposure of abuses to which the practice leads, and a warning as to fire hazards—in a building occupied by the Department of Justice there are stored forty-five thousand law volumes, ranged on shelves which have been put up in the rooms and hallways, and "subject to destruction by fire at any moment"—make up the most effective form of popular appeal.

These, however, are mainly local considerations. What is of genuine and general architectural interest is the writer's urgent demand that the Park Commission plan for the building of a Department of State shall be carried out without delay. The scheme, which is based upon L'Enfant's original proposals, provides for the grouping of the executive departments about Lafayette Square. Convenience alone would justify this grouping, but the dignity and beauty of arrangement thus to be obtained leave no alternative worthy of consideration. Accustomed to regard the American people as exemplary in the habit of courageous building, we on the hither side of the Atlantic are rather shocked at these proofs of "a stupid and blundering national policy," and we are very sincere in wishing the American Institute all success in its campaign.

Sincere and widespread regret is felt at the loss of Lieut.-Colonel H. L. Florence, a former Vice-President of the R.I.B.A., who has died at the age of seventy-three. To those who had known him from the days of his early manhood, when, in 1860, he carried off the Soane Medal and the Gold Medal of the Royal Academy, or even from the later period when, in 1897-99, he was Vice-President, it will seem astonishing that one who had preserved so long a measure of youthful spirit could have already reached so advanced an age. Remembering him very vividly as an ardent and energetic young officer of Volunteers, one had casually thought of him, being no doubt among the first to go to the front: that he had actually passed three-score and ten seemed almost inconceivable. As an officer in the old Ninth Surrey Rifles, he was immensely popular, and, indeed, he was wherever he went, because of his personal charm—a fairy gift that must have gone far, also, towards securing him his very considerable success professionally. His twelve months' tour in Italy on the strength of his R.A. Travelling Studentship, and his Beaux-Arts experience afterwards, each left some impress on his work, whether he was designing the Holborn Viaduct Hotel and Station, the Institute of Journalists at Blackfriars, the Coburg and Carlton Hotels, or the offices for Messrs. Edward Lloyd

, in Salisbury Square. Even when he was of the busiest of architects, he gave much time thought to the work of the A.A. and the parent institute; and his unfailing geniality was not superfluous—he had a large heart and a lavish hand, and was always a cheerful giver.

Some curious anomalies of rating are cited by "Surveyor," who is doing a good work by writing a series of articles on this and cognate subjects in the "Liverpool Courier." Property rating, he shows, gives preferential treatment to those who avoid investment in real estate. Land used in the construction of a building, increases the value of the rating of the building; but used in the manufacture of the furniture, which equally improves the amenities of a dwelling, it does not increase the rating. Statuary fixed outside a place of public entertainment would be seized on by the assessors as an excuse for putting the rates high, while an unattractive advertisement would probably be rated much lower. On the two instances it is clear that the present antiquated method of assessing rates puts a premium on inferior construction and on poor design. While real property is only about one-fifth of the whole property in the country, it bears the whole burden of the local rates. Therefore, "Surveyor" argues, an equitable adjustment would reduce the burden on real property from, say, 10s. to 2s. Capitalists know this, and are consequently avoiding this class of investment, to the detriment of all who are concerned in building, and ultimately to the prejudice of the housing problem. Upon these grounds, reform is urgently needed.

Pisé de terre construction still finds strenuous advocacy in certain organs of the Press. Much credit is given to the subject in the "Spectator," which is enamoured with the ease and cheapness of this primitive method. Three wide columns of the issue for February 19 of that highly respectable paper were occupied with a somewhat laboured advocacy of this new fad. All schemes of home land settlement, it is contended, "are in danger of being blocked by the unsolved problem of how to provide necessary buildings." Salvation is to be found in pisé de terre construction, in which the walls of rammed earth or chalk can generally be dug up on any spot, and can be shovelled and rammed by unskilled labour. A hut built at Guildford by members of the local Volunteer battalion, under the supervision of their adjutant, who is an architect, is twenty feet square, and "the walls are formed of rammed earth eighteen inches thick. No foundations were needed, but on a fairly level piece of ground temporary wooden cases are first erected. These are made in sections, and can be used over and over again. Inside the woodwork the earth is shovelled and beaten down tight and solid by means of wooden mallets." Fifty-two inexperienced men built these walls in ten hours, and it is therefore estimated that the cost, if the men had been paid sixpence an hour, would have been about twelve or thirteen pounds. To this must be ordinarily added the cost of corrugated iron or other roofing, of paved or wooden flooring, and of waterproofing the walls. With other buildings some sort of framework would be necessary. Obviously, therefore, the item for labour is but one out of many; but still the total cost would be considerably less than that of any other system of construction.

In the "Spectator" article there is a very fair recognition of some of the difficulties that may disqualify pisé de terre for use in this country. Doubt is hinted as to whether it could stand our climate. In climates with a hot sun, like that of Australia, the outside of a pisé de terre house soon becomes, we

are told, so hard that it is impossible to drive in a nail; but that does not happen here; the British sun will not turn earth into earthenware. Therefore some waterproofing material would have to be applied to the outside." All the same, the stuff remains rammed earth, friable, unstable, sensitive to temperature, in every way unfit to form the walls of a dwelling for human beings. Well may the writer of the article say that this proposition sounds strange in most English ears; and there is no force in this apologia—"but in all new countries, and indeed in most other parts of the world but England, rural buildings—that is, isolated farms, cottages, and agricultural buildings—are erected by the men who are to live in and use them. Canadian, Australian, and New Zealand settlers, at any rate, always begin by building their own houses. Building in pisé de terre, if it could be introduced into this country, would restore to us the power of the tiller of the soil to house himself." There is no need to dwell on the utter ineptitude of this comparison. Pioneer settlers in new countries would not build their own huts, nor use crude materials, unless they were compelled. Britain is not a new country, building materials and the means of conveyance are here plentiful, and the rural labourers can find more appropriate employment than that of constructing mud hovels.

While giving all credit to the advocates of pisé de terre for a sincere belief that they have hit upon a happy expedient for the part settlement of the rural housing problem, we feel bound to reiterate our former protest against the degradation of housing that the proposal involves. Even supposing that pisé de terre (the French phrase sounds so much better than the blunt English "rammed earth") has all the virtues claimed for it—that it could pass muster with the by-law authorities and the sanitarians, and that it could withstand for a reasonable time our variable climate, the fact remains that it is too utterly primitive. Its advocates cannot have given sufficient consideration to this point. If "rural economy" has come to such a pass as to entertain with any show of toleration the proposal that labourers shall live in mud-walled houses, no time should be lost in thoroughly overhauling it. There must be something radically wrong with it. That, however, is not our affair; and our protest against the proposal is the less vehement because we are convinced that there is no danger of its taking practical effect anywhere, save as an amusing experiment for country gentlemen, who in the upshot will demonstrate nothing so clearly as the utter futility of it as a solution of the rural housing problem, or even of that segment of it which the writer seems to have chiefly in mind—namely, the attraction of labour to the land on some sort of allotment system—an excellent object, which we should be very reluctant to discourage. It is as a matter of principle that we plead for broader views of that problem. After proving his manhood in the trenches, the rural labourer deserves, and will demand, better housing than the cheapest that human ingenuity can devise, and something more of dignity and amenity than pisé de terre can offer.

TO OUR READERS.

In view of the Government restrictions on the imports of paper and pulp, readers are requested to obtain their copies of this Journal from one source, by placing a regular order with a newsagent, instead of buying copies haphazard; in this way they will reduce the wastage of copies, and so enable us to do our part in the present effort for national economy.

HERE AND THERE.

Passed by the Censor.

FROM Mr. G. J. Howling, a former colleague on the editorial staff of this Journal, I have received a letter in which he describes what in War time may be called "The Architecture of Gallipoli." Mr. Howling, who is now resting his nerves in the quietude of the Libyan desert, experienced the full severity of the campaign at Cape Helles. He gives me an account of what he saw from the trenches, and also of what he saw in the way of military building within our lines. Here is the matter in his own words:—"Cape Helles was not greatly built upon. The village of Sedd-el-Bahr and a few scattered farmsteads were the only architectural features that came within the area captured by the British forces. The village itself was a very tiny affair, consisting of two or three rambling lanes with an occasional cottage. It contained a mosque of fair size. The principal feature of the locality, however, was the Sedd-el-Bahr fortress, a huge square stone building somewhat reminiscent, in general appearance, of the Tower of London. Built at the very mouth of the Dardanelles, it afforded a splendid target for our warships, which battered it unmercifully. Huge holes had been torn in its walls, and whole sections of its parapet had been knocked away. The place must have been erected long before the advent of modern heavy artillery, the great power of which was here well demonstrated. Of architectural interest, the building had none, except what was conferred by a remarkably plain and formidable exterior. Of farmhouses there were very few, considering the extent to which the Peninsula had apparently been cultivated. All had suffered badly from artillery fire, and looked very melancholy in their ruined condition. Some of those in favourable situations were used after a certain amount of renovation as military headquarters. All these small buildings were remarkably unattractive (apart from the havoc wrought by war); and originally they could have had nothing of the charm of the English farmhouse. They were built of a local limestone, of a very chalky quality, and appeared to have been put together in the clumsiest manner possible. Certainly the builders had nothing but a

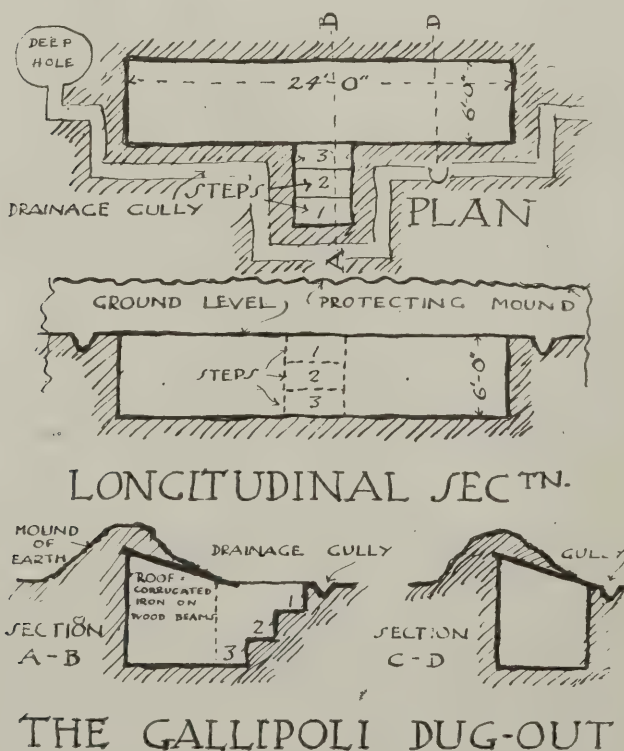
very elementary idea of their craft. The village of Krithia appeared to be rather interesting; but as it happened to lie at least half a mile within the Turkish lines I had no opportunity of viewing it at close quarters. Seen through a periscope from our firing line, it presented a picturesque cluster of white walls—and white walls only. Not a roof remained, so heavily had the place been bombarded from time to time. Krithia was the cause of many a bloody struggle between Briton and Turk; and it was always viewed with a certain amount of vindictiveness by our men. Time after time a battalion would volunteer to charge out and capture it; but military authority forbade the venture. Poor Krithia! Unkindly fate that should condemn it to almost total demolition! and only a few months before I set eyes upon it a party of British Marine had marched up its narrow main street to warn the simple peasants of the coming bombardment. Between the village and the British forces a formidable line of entrenchments intervened, held by thousands of Turkish soldiers and supported by a great mass of artillery. Krithia was the target up to the last moment. It was being heavily bombarded even while the troops were embarking from the beaches; and when I last saw it it was enveloped in a great cloud of smoke from the bursting shells."

* * * *

The above is an interesting account of what Gallipoli offered in the way of Turkish village architecture, but more intimate is Mr. Howling's description of a newer type of building—the military art of sand-bag and dug-out architecture. He says:—"Some really astonishing results were achieved especially in the neighbourhood of "W" Beach where, by the time of the evacuation, quite a small town had grown up. The sand-bag building has character all its own. It is like nothing that has gone before, though there is something Roman in the stern simplicity of its outward aspect, in the rugged regularity of its individual units; something suggestive of the powerful and primitive force which have been aroused. The method of erecting the sand-bag building was extremely simple. You first secured a few hundred empty sand-bags, filled them with any old rubbish near to hand (odd enough, never with 'sand'), marked out a site and set to work on more or less conventional lines adhering to the regulations of brickwork 'bond' as much as possible. Building with sand-bags is, in fact, like building with bricks on a much larger scale, but without cement. The supreme virtue of the sand-bag is that it will stay where it is put without any artificial aids to stability. When the walls had reached a sufficient height, you would mark out window and door frames with match boarding, and continue to build up around, finishing off with a corrugated-iron roof laid on rough beams. There was your sand-bag building complete and ready for occupation. The only drawback was that it was liable at any moment to be blown sky-high by a shell from Achi Baba. But that was a risk which had to be taken."

* * * *

Then we come to a still higher form of military architecture—the dug-out. Mr. Howling says:—"The Gallipoli dug-out, of which a fairly typical example is shown by the accompanying rough sketch, was almost as interesting as the Gallipoli sand-bag house, and quite as ingenious. It consisted, as will be seen, of a hole about 6 ft. deep by 6 ft. wide by 24 ft. long, roofed with sloping corrugated iron and protected at the back by a mound of earth. Access was provided by means of three big steps, which, in wet weather, had to be covered over to prevent the rain from getting in. Drainage was provided by a gully



THE GALLIPOLI DUG-OUT



ENGLISH INTERIORS. II.—WENTWORTH WOODHOUSE, ROTHERHAM: THE SALOON.

JOHN CARR, ARCHITECT.



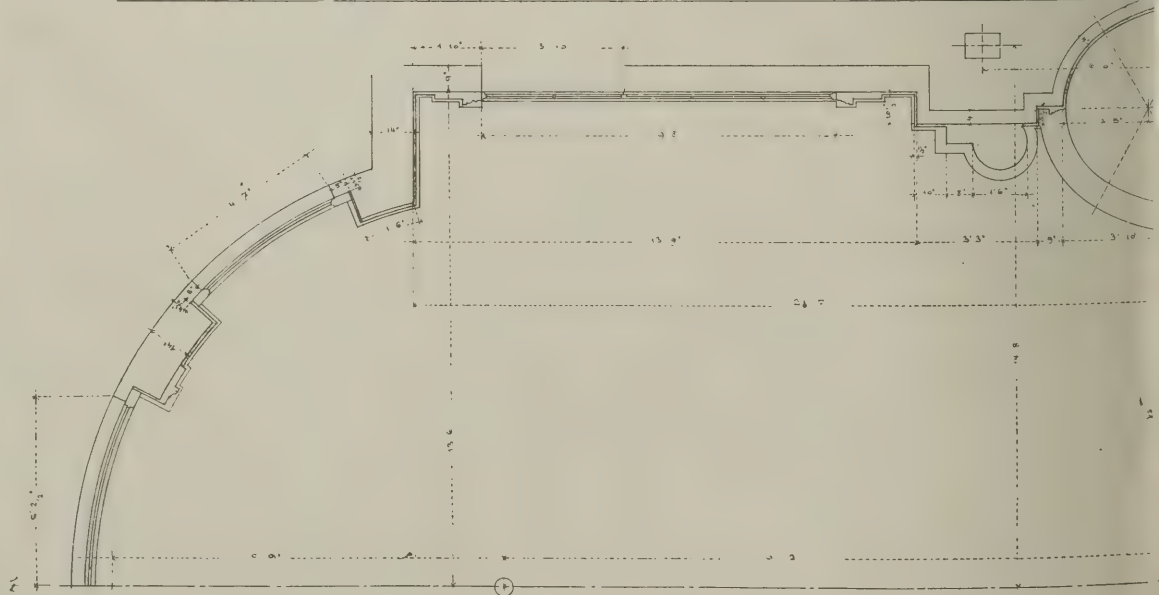
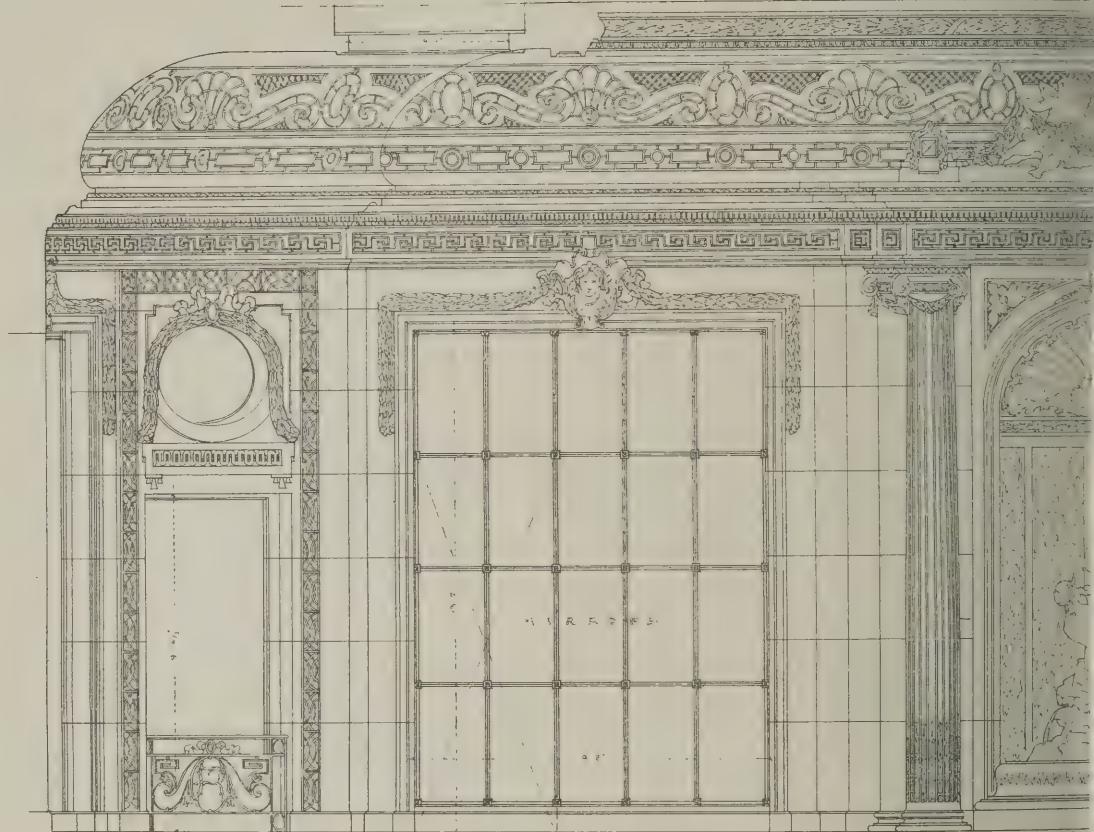
MODERN DOMESTIC ARCHITECTURE (SERIES II.). XXXI.—“HOWBURY,” ST. ANDREWS: ENTRANCE FRONT.

MILLS AND SHEPHERD, ARCHITECTS.

THE RIT

WINTER

SOUTH

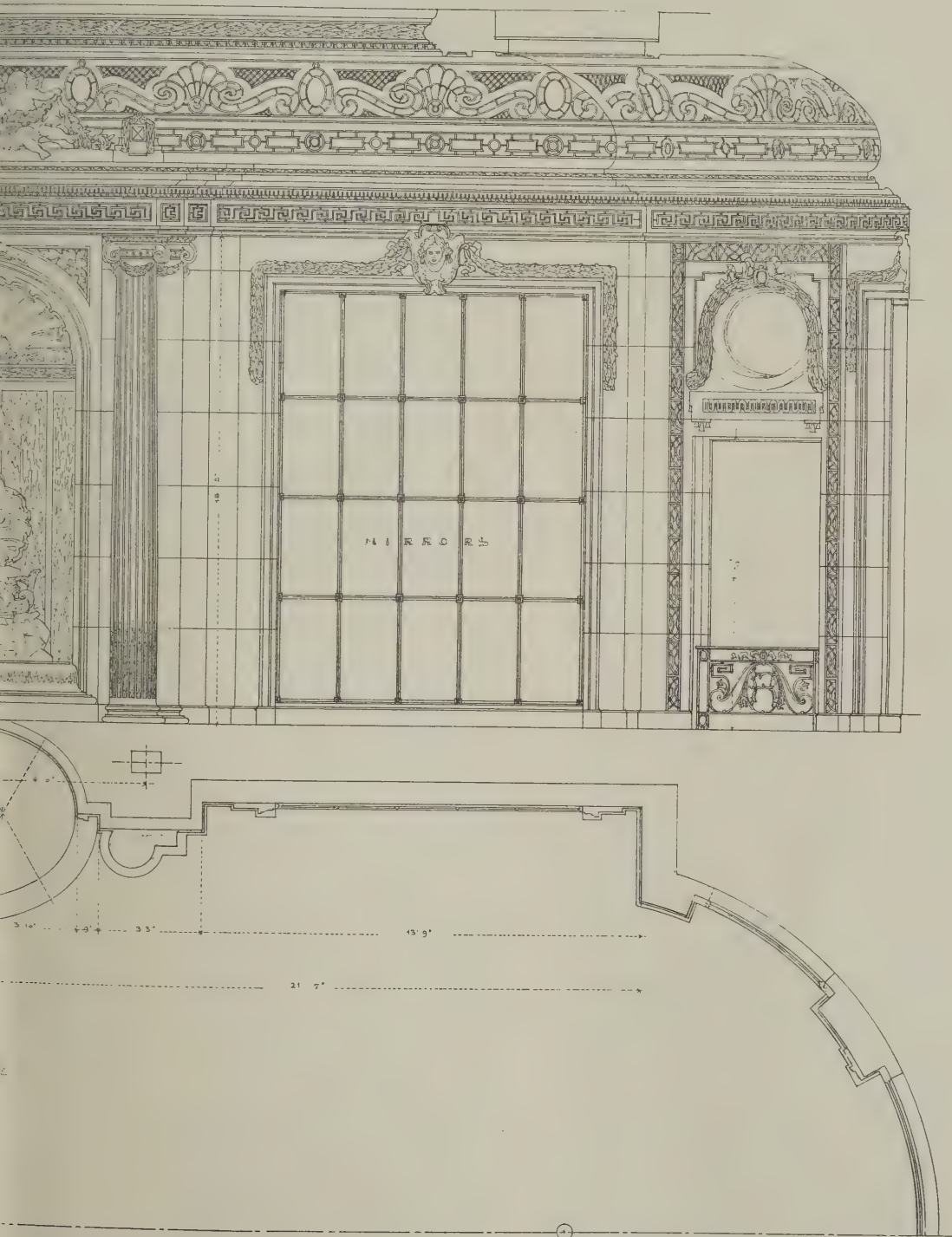


HOTEL

DRAWING No 143

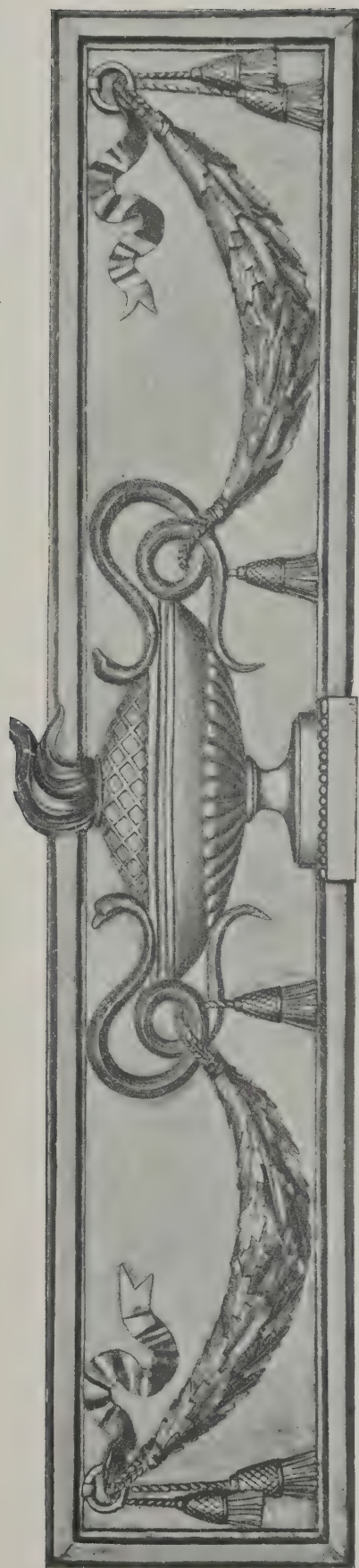
GARDEN

ELEVATION



1.—RITZ HOTEL, LONDON: WINTER GARDEN.

ARCHITECTS.

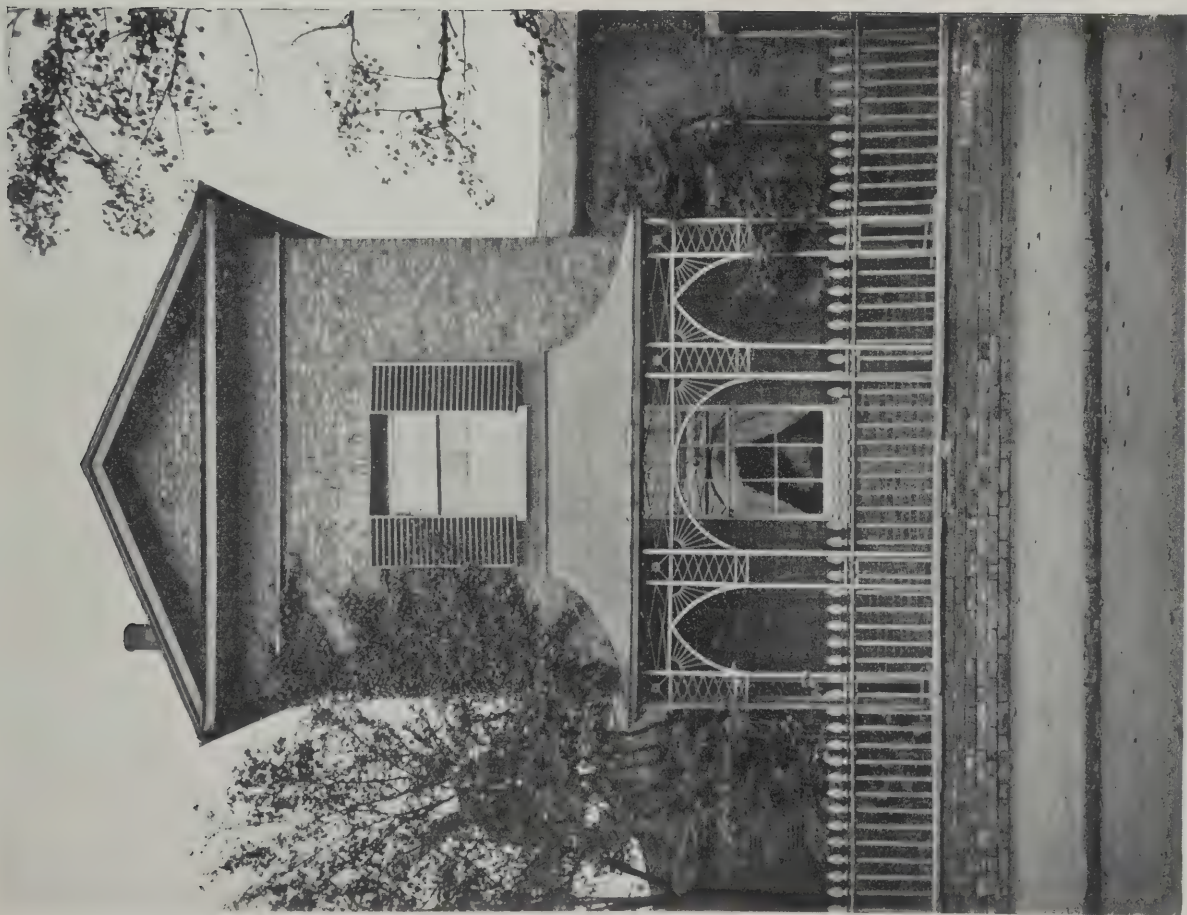


French Panel (Gilt in Victoria and Albert Museum, South Kensington.



Carved Wood Enrichment to Overmantel in Salon, Marble Hill, Twickenham.

DETAILS OF CRAFTSMANSHIP (SERIES II.).—I.



House at Mitcham.



House at Hampstead.



No. 127.



No. 125.

MODERN AMERICAN ARCHITECTURE. XXXV.—TWO HOUSES ON EAST 80th STREET, NEW YORK.
 DELANO AND ALDRICH, ARCHITECTS.



STUDENTS' DESIGNS (SERIES II.). XIV.- DESIGN FOR FAÇADE FOR AN ART DEALER.
BY SIDNEY C. FOULKES.

running around the dug-out and emptying itself into a deep hole at the side. Dug-outs on these lines, when properly built, were quite weather-proof, and afforded good protection from shrapnel shell-fire. High explosive dropped right inside was the only shell that could do them serious damage. The chief difficulty of these dug-outs was the provision of adequate openings for light. Those near the firing line had to depend upon the entrance alone; but in other cases it was often a practice to cut small oblong apertures in the ground at intervals along the front of the dug-out just under the lower side of the roof. By this means a very fair amount of light found its way to the dug-out. Of course, endless variations from the type above described were to be found. The adaptability of the dug-out to peaceful purposes is obvious. It is likely to supplant the wooden shed as an out-house? Most likely. For one thing, it is economical: you dig your hole, roof it in, and the thing is done. The saving in timber is very considerable. A properly constructed dug-out serves all the purposes of an ordinary shed, it offers very little obstruction to the view for peaceful uses the parapet could be dispensed with), and, if planted with shrubs and flowers around, it might conceivably become an object of no little attraction. Thus may the things of war be adapted to purposes of peace!"

* * * *

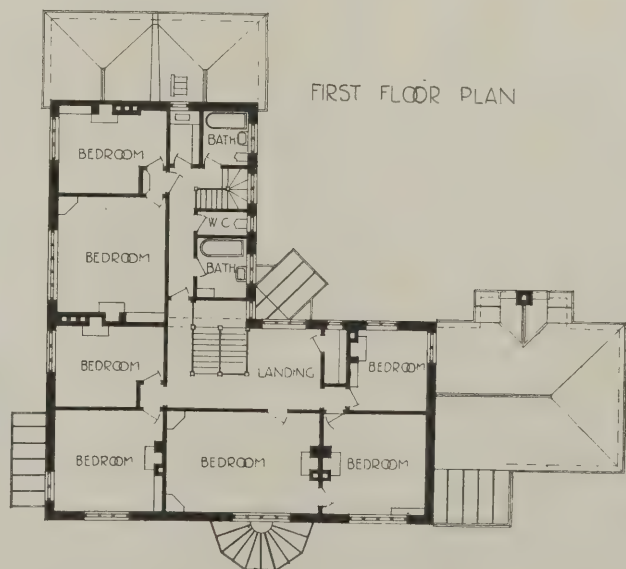
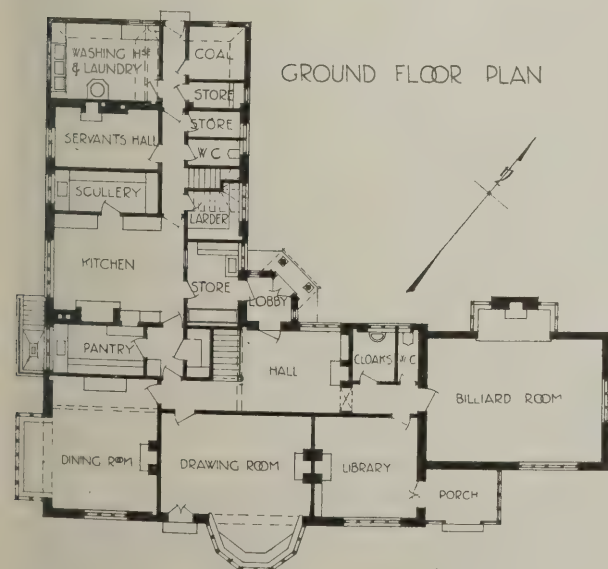
Dug-out architecture being obviously the architecture of the future, the thing to do of course is to get to the waterproofing business.

UBIQUE.

THE PLATES.

The Saloon at Wentworth Woodhouse.

WENTWORTH WOODHOUSE, the Yorkshire seat of Earl Fitzwilliam, was built originally from designs by Flitcroft about 1740, but John Carr, of York, was responsible for many alterations and additions, chief among these being the saloon shown on our plate. It is typical of eighteenth-century scholarship in architecture, with an element of artificiality about it and a straining after a kind of theatrical effect. But, undeniably, this saloon has the "grand" about it, and the manner of its decoration with classical figures in niches, bas-reliefs in panels, and a governing frieze of female heads connected by festoons, captivates the eye. The marble floor, too, displays a very fine design.



"HOWBURY," ST. ANDREWS. MILLS AND SHEPHERD, FF.R.I.B.A., ARCHITECTS.

"Howbury," St. Andrews.

This house is built of brick, cement harled, the roofs being covered with old Easdale slates taken from the roofs of the parish church before the recent restoration. Messrs. Mills and Shepherd, FF.R.I.B.A., were the architects, and Messrs. John Ritchie and Son, of St. Andrews, the builders. Plans of the house are given below.

Winter Garden, Ritz Hotel, London.

The Winter Garden at the Ritz Hotel opens off the lounge on the ground floor. The walls are faced with greyish white Echaillon stone, surmounted by a rich cornice, over which is a cove having trellis ornament painted green. The glass roof is supported by a wrought-iron framework, from which depend two lamps, gilt, and adorned with painted foliage and flowers. In the middle of the wall opposite the entrance is a decorative niche surrounding a Louis XVI. fountain, formed of rocks and allegorical figures, representing "La Source." This fountain is also Echaillon, the figures and ornaments being of gilt repoussé lead. On either side is a large panel filled with twenty bevelled mirrors framed in gilt bronze. Messrs. Mewès and Davis were the architects.

Carved Enrichments.

The French panel is of carved walnut, gilt; it dates from the late eighteenth century. The enrichment from Marble Hill is over the mantelpiece of the salon, and is also of carved wood gilt. The authorship of Marble Hill, which was built in 1724, has never been determined; it has been ascribed to Morris, but more probably the house was designed by Colin Campbell or William Kent.

Late Georgian Houses.

The quiet charm of both these houses needs no emphasis. No more need be said than that they are in this respect delightfully typical of their period.

Houses on East 80th Street, New York.

These are good examples of modern American architecture. Plans are given on the next page.

Façade for an Art Dealer.

This design by Mr. Sydney C. Foulkes, of the Liverpool School of Architecture, is one of those recently approved by the Board of Architectural Education.

OBITUARY.

Mr. H. L. Florence, F.R.I.B.A.

The death has occurred at Bath, after a short illness of Lieut.-Colonel Henry Louis Florence, V.D., of 9, Prince's Gate, Hyde Park, S.W., and 16, Royal Crescent, Bath, in his seventy-fourth year. Lieut. Colonel Florence, who was born in 1843, the eldest son of the late Mr. John Henry Florence, of Streatham, was educated privately and after being articled in 1860 he studied in the Atelier Questel, Paris. He was Soane medallist of the Royal Institute of British Architects, 1869, and travelling student and gold medallist of the Royal Academy, 1870, travelling in Italy. He commenced practice as an artist in 1871 and designed Holborn Viaduct Hotel and station; Holborn Town Hall; restoration of Gray's Inn Hall; offices for Messrs. Edward Lloyd, Ltd., Salisbury Square, E.C.; Coombe House and Coombe Farm, near Croydon; mansion for Mr. Edward Lloyd in Delahay Street; the Hotel Victoria; Paddington branch of the London Joint Stock Bank; new library, pension-room, and classrooms, Gray's Inn; new station, St. James's Park, for Metropolitan District Railway; Empire Hotel, Lowestoft; Coburg and Carlton Hotels; extension of First Avenue Hotel; Queen Victoria Memorial, Kensington; Freemasons' Hall, additions; the Institute of Journalists; and alterations and additions at United Services Club. When he retired from practice he interested himself in the management of several hospitals and for many years was an almoner of St. Bartho-

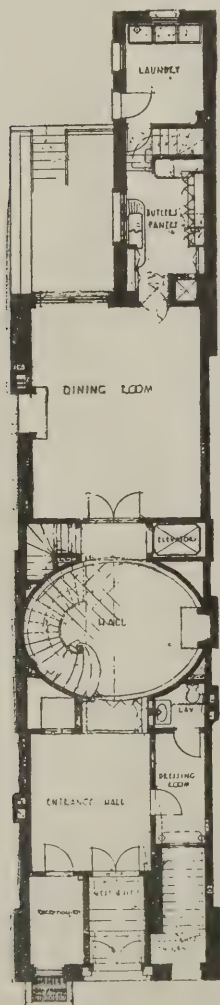
lomew's Hospital, on the Council of the Charing Cross Hospital, and a Governor of the Foundling Hospital, and to these institutions he was a generous benefactor. For twenty-one years he was a Volunteer officer, retiring with the rank of lieutenant-colonel in 1892 and receiving the Volunteer Decoration. He was a Freeman of the City of London and a liveryman of the Haberdashers' Company and served as a Master of that Company for the year 1914-15. He was a Fellow of the Royal Horticultural Society.

Lieut.-Colonel Florence had been a frequent visitor to Bath for upwards of ten years, for he had been always keenly interested in the architecture of the city and the West of England. He was an artist as well as an architect and had had water-colour sketches of his own exhibited. He purchased 16, Royal Crescent (formerly occupied by Mr. T. H. Miller), in June last with a view to taking up his residence there, and spent a good deal upon furnishing and redecorating it. His interest in hospitals he brought to Bath and he was already a subscriber to the Royal United Hospital and the Royal Mineral Water Hospital. It is understood that Mr. Florence left important bequests to several London hospitals and that the Trustees of the National Gallery are empowered to select any of his pictures which they consider worthy of a place in the national collection. He has also left a sum of money at the disposal of the Trustees. The funeral service was held at All Saints' Church, Ennismore Gardens, Prince's Gate, on Wednesday last, the interment taking

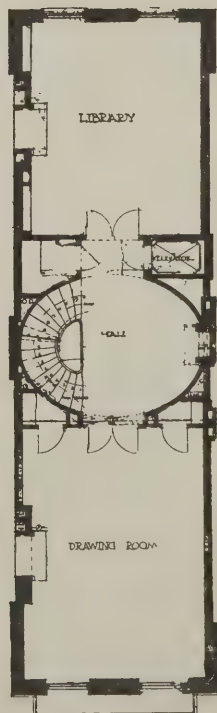
place at Norwood Cemetery. Mr. Florence was president of the Architectural Association during the session 1878-9, and at the funeral the Association was represented by Mr. H. Austen Hall (president) and Mr. F. R. Yerbury (secretary).

GARDEN CITY HOMES IN WEST HAM.

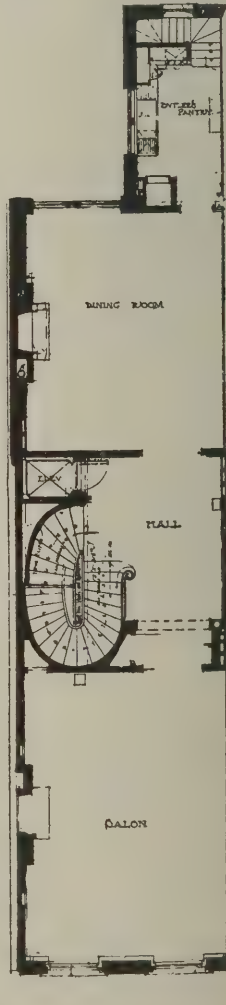
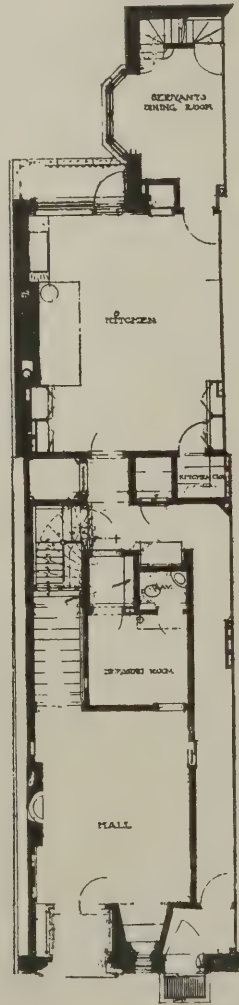
Garden city lines have been followed by the Port of London Authority in their rehousing operations at West Ham, where 204 cottage residences in agreeable contrast with the ordinary working-class home have been erected adjoining Prince Regent's Lane. The houses, which are built in blocks of two or more, have frontages of various designs, with tiled roofs. Each cottage has a garden at the rear, and there is a small front garden, except where the house faces one of the grass-covered open spaces for which provision has been made. The forecourts are paved back and front. All the roads on the estate are 40 ft. in width, and the distance between each group of houses is such as to ensure ample light and air. Of the houses fifty are three-roomed, with scullery, 124 four-roomed, and thirty five-roomed. Each house is provided with a bath, copper, cooking range, gas lighting, and indoor lavatory. Wardrobe cupboards are supplied to each bedroom, and there are metal safes with outside ventilation on the ground floor.



No. 127.



No. 121.



HOUSES ON EAST 80th STREET, NEW YORK. DELANO AND ALDRICH, ARCHITECTS.
(See also Supplementary Plate.)

NEWS ITEMS.

Architectural Association's New Address.
Attention is officially called to the change of address of the Architectural Association. It is now No. 37, Great Smith Street, Westminster, S.W. (secretary, Mr. F. R. Burbury).

Waterproofing Cement.

The value of any concrete building is reduced if the concrete is not waterproof. In many cases the use of a porous concrete has produced such dampness upon the interior walls as to render the structure useless for the purpose intended. We learn that the final plan in the People's Park, Grimsby, was delayed many months ago with puddling of the concrete and that the borough surveyor is pleased with the result.

Proposed Perthshire Model Village.

It is proposed to establish a garden village in Perthshire for the training and employment of county soldiers who may be partially or permanently disabled. At a meeting of ladies held at Pitlochry Mrs. M. Meldrum explained that districts contributing £150 could name a house and nominate the men who would reside in it. The proposed buildings might take the form of a county model village. About £25,000 had already been subscribed locally. Arrangements were made for collecting funds.

Grimsby Master Builders' Association.

The Grimsby and District Master Builders' Association held its annual meeting at the Builders' Exchange, Victoria Street. The following officers were elected for the ensuing year: President, Mr. W. H. Robinson; senior vice-president, Mr. Alfred Robinson; junior vice-president, Mr. Cyril Godhand; secretary and treasurer, Mr. J. Rushforth. In the annual report it was stated that attention had been given to the questions of reduced rates for insurance against air raids and bombardment, cheap postage, and also the Bill for the prevention of Raising Rents and Mortgages, with some success. The corporation had been approached for equitable agreement to the conditions of contract, which subject is being held over in consequence of the national crisis. The question of deferred payment on undeveloped household land had been introduced and is still being followed up.

New Municipal Buildings, Spennymoor.

New municipal buildings at Spennymoor, which have just been opened, are situated in the High Street. Pressed brick with stone facings is used in the frontage, and the back is of Sherburn select brick, with stone dressings. Blue-grey slates from Port Dinorwic cover the roof. The floors of the public hall and other portions are constructed of reinforced concrete, covered with pitch pine blocks. The flat roofs of some parts of the building are of asphalt, and lighted by domes of patent glazing. There are seven well-lighted shops with teak fronts and mosaic transoms. There is a public market 100 ft. long, 30 ft. wide, and 16 ft. high, with basement and lavatories at each end, and storeroom for cycles, heating chamber, etc. The first floor contains a large public hall 84 ft. long and 40 ft. wide, with stage platform and gallery, and altogether there is seating accommodation for 850 persons. There are cloak rooms, lavatories, ante-rooms, and a large crush hall, and the necessary exits. The interior of the hall is panelled in wood, and the ceiling decorated with plaster enrichments. The Council Chamber is 32 ft. by 26 ft.,

and is well lighted from the dome. There is a gallery for the public, and the necessary committee rooms and separate offices for the officials are provided, also five large offices to let. There are three entrances from High Street—one to the market, another to the public hall, and the other to the Council Chamber. The clock tower is 90 ft. high. Mr. G. T. Welburn, of Middlesbrough, is the architect, and Mr. J. L. Miller, of South Shields, the contractor.

Steel and Concrete at the Albert Hall.

At the forty-fifth annual general meeting of the Corporation of the Royal Albert Hall, held last week under the chairmanship of Earl Howe, it was stated that during the last two years a very large amount of money had been spent on the structure. In the interests of the public it became necessary some time ago to replace all the wooden parts of the roof by concrete and steel. Incidentally, it was found that the wall at the back of the organ was made of wood and this had been replaced by fire-proof material. With respect to the suggestion that the London County Council should take over the inspection of the building, Lord Howe and the Duke of Wellington and the other members of the Council of the Corporation had claimed exemption from all interference because they had their rights on account of their royal charter. They, nevertheless, had consulted with the London County Council and arranged for a special clause which enabled them to carry out their schemes for protection against fire or accident in their own way.

Architectural Association of Ireland.

At the annual exhibition of the Architectural Association of Ireland, which opened last week at South Frederick Lane, Dublin, Mr. R. Caulfield Orpen, R.H.A., was well represented by some very effective still life studies. The contributions of Mr. Cecil G. McDowell included a drawing of the west doorway of Clonfert Cathedral and a study of Cormac's Chapel, Cashel. Professor W. A. Scott had on view some remarkably fine direct studies of buildings in Belgium, and there were some pretty water-colour and pastel sketches by Mr. C. G. Lynes. Notable among the other exhibits were: Competitive designs for the new Board of Works Offices in London, by Messrs. Bachelor and Hicks and Messrs. O'Callaghan and Webb; a drawing by Mr. Louis F. Giron of a new Labour Exchange, of which Mr. A. Robinson, M.V.O., is the architect; Mr. G. Leask's collection of photographs; some original studies in decoration by Mr. T. A. Russell; and the design by Mr. W. A. Dixon of the new Munster and Leinster Bank at Waterford.

A Reinforced Concrete Causeway.

Engineers have long contemplated the sandbanks stretching between India and Ceylon as affording the route for the railway that must ultimately connect the beautiful isle of the Sinhalee with the Indian mainland. But just how to make Adam's Bridge a bridge in fact as well as in name has baffled several generations of engineers. It is now proposed to construct a causeway to extend about twenty miles, of which about seven miles would be built upon the dry land of the various islands, and thirteen miles in water. The section through the sea would be constructed on a double row of reinforced concrete piles driven into the sand, pitched at 10 ft. centres, and having their inner faces 14 ft. apart. These piles would then be braced together longitudinally, with light concrete

arches and chains, and transversely with concrete ties, struts, and chains. Behind the piles slabs of reinforced concrete would be slipped into position, the bottom slabs being sunk well into the sea-bottom, and the space enclosed by the slabs filled in with sand. The top of the concrete work would be carried 6 ft. above high-water. The estimated cost of the work is £740,000.

ALTERATIONS IN THE R.I.B.A. EXAMINATIONS.

The Council of the Royal Institute of British Architects give notice that the Intermediate and Final and Special examinations will be held once only this year, namely, the Intermediate from June 2 to June 9, the Final and Special from June 22 to June 30. A notice respecting the sending in of applications, drawings and fees will appear in due course.

Further, the Preliminary Examination for the registration of candidates as probationers will be discontinued. Candidates will for the future be required to submit any of the following certificates, or such other certificates as may be satisfactory to the Council:

The Matriculation examination at any University in the British Empire.

The senior or junior (honours) local examinations conducted under the authority of any University in the British Empire.

The school or leaving certificate of the Oxford and Cambridge Schools Examination Board.

The examinations held under the Central Welsh Board.

The examinations for the first-class certificate of the College of Preceptors.

The senior or junior school examination or the Matriculation Examination of the University of London.

Senior school certificate or a school certificate of the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield.

The school certificate of the University of Bristol.

The certificate must show that proficiency has been attained in the following subjects:

Composition, dictation, arithmetic, algebra and elements of plane geometry, geography and history, language (either Latin, Italian, French or Russian), elementary mechanics and physics.

Candidates who have obtained a success in any of the Board of Education examinations in art held in 1913 and subsequently will be exempted from subjects 6 and 7, namely, geometrical drawing and free-hand drawing from the round.

The following certificates from the Board of Education, South Kensington, are accepted as exempting from the eighth subject, elementary mechanics and physics:

A first-class in the two Board of Education examinations: Subject 6, theoretical mechanics, A. Div. 1. Solids; B. Div. 2. Fluids. Stage 1.

Candidates who do not possess the Board of Education certificates will be required to submit with their applications drawings showing their knowledge of either geometrical drawing or perspective and freehand drawing.

All applications for registration as probationers must be accompanied by a fee of two guineas.

CONCRETE AND STEEL SECTION

(MONTHLY.)

A SIMPLE METHOD OF FINDING NEUTRAL AXIS.

[SPECIALLY CONTRIBUTED BY A. C. MESTON, Licentiate R.I.B.A.]

IN view of the new regulations made by the London County Council, and approved by the Local Government Board, with respect to reinforced concrete construction, which are now in force, it is an opportune moment to draw attention to a simple method (which can be applied without a high degree of mathematical knowledge) of finding the neutral axis in a reinforced concrete beam or slab.

The formulæ generally in use for finding the neutral axis are, even in the simplest cases, somewhat complicated, and their derivation is sometimes difficult to trace. In the case of T-beams, with or without top reinforcement, the formulæ become still more obscure and complicated, and consequently are often used without any very clear comprehension of their rational development. These formulæ give eventually a ratio which is a decimal of the depth of the beam, and further working is required for ascertaining the exact position of the neutral axis in terms of its depth in inches below the top of the beam. Values for some of the terms in the equations evolved in arriving at this ratio contain one or two ciphers after the decimal point, consequently giving rise to considerable liability to error (particularly in working with the slide rule) when multiplying or extracting the square root.

A simple method is here shown of finding the position of the neutral axis in a reinforced concrete beam, and the reason for its position is also demonstrated. It will be generally agreed that there is less liability to make mistakes when the derivation of the formulæ used is understood.

Two of the advantages claimed for the formulæ given below are:—(1) They are applicable to any type of beam—rectangular, T, or L beams, either singly or doubly reinforced. (2) The result arrived at is the actual depth in inches from the top of the beam or slab to the position of the neutral axis, and is not a ratio requiring further working out.

The following simple facts must be borne in mind:—(1) The position of the neutral axis in any beam is such that the moments of the areas in compression about such axis are equal to the moments of the areas in tension about the same axis. (2) The moment of any section about a point is the area of the section multiplied by the perpendicular distance between its centre of gravity and the point in question. (3) In reinforced concrete the moment of the steel is equal to "m" times the moment of the same area of concrete, "m" being $\frac{E_s}{E_c}$, and generally in this country taken at 15. (Note.—Any variation in this figure does not affect the

formulæ here given, the necessary figure simply being substituted for the 15 shown in the examples. In Italy, for instance, the figure is taken at 10 instead of 15.)

In the following formulæ the notation used is as follows:—

b = breadth of beam, or, in T or L beams, breadth of table of beam.

b_t = in T or L beams the breadth of rib

d = effective depth of beam.

d_1 = depth from top of beam to centre of gravity of compressive steel.

t = in T or L beams the thickness of table of beam.

y = depth in inches from top of beam to the neutral axis.

A_s = area of steel in tension.

A_{st} = area of steel in compression.

The position of the neutral axis can be found by a combination of the following formulæ marked (a), (b), (c), and (d). Reference to the sketches marked Case 1, Case 2, etc. (see Fig. 1) will make quite clear the application of the formulæ to various types of beams.

(a) $b y \times \frac{y}{2} = \text{moment of concrete above neutral axis in Cases 1 and 3.}$

(b) $14 A_{st} (y - d_1) = \text{moment of steel above neutral axis in Cases 2, 4, and 6.}$

(c) $b t (y - \frac{t}{2}) + \{ b_t (y - t) \times \frac{y - t}{2} \}$

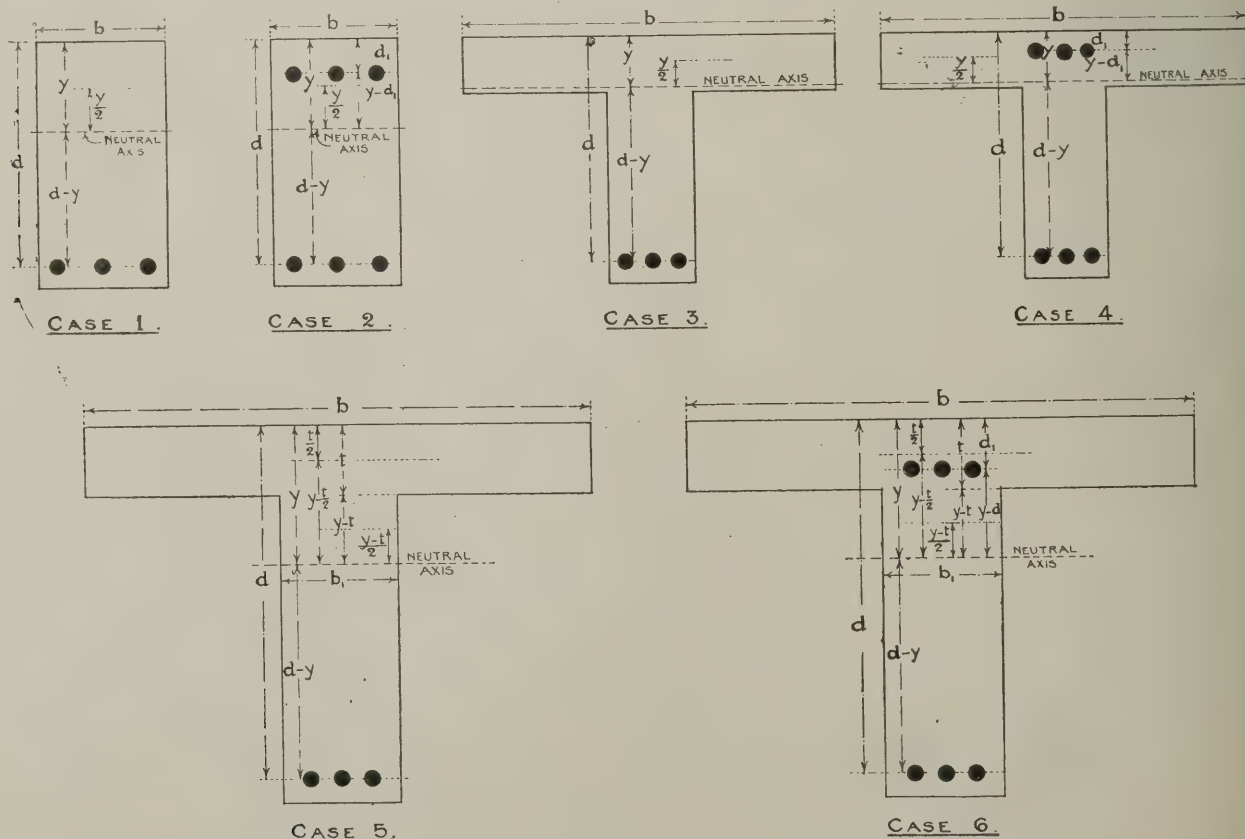


Fig. 1.

ment of concrete above neutral axis in cases 5 and 6.

(d) $15A_s(d - y) =$ moment of steel below neutral axis in all cases.

A beam of the type indicated in Case 1 would be solved by the formula (d) , that is $b y \times \frac{y}{2} = 15A_s(d - y)$.

A beam of the type indicated in Case 2 would be solved by combining the formulæ (a) + (b) = (d). In Case 5 the formulæ used would be (c) = (d), and in Case 6 the formulæ used would be (b) + (c) = (d).

One or two working examples will make the method clearer. Taking first the simplest case of a beam coming within Case 1 or Case 3 (see Fig. 4):

$$(a) = (d)$$

$$b y \times \frac{y}{2} = 15A_s(d - y)$$

Substituting values of "b" and "d"

$$36 y^2 = 30 A_s(d - y)$$

$$36 y^2 = 65.4(d - y)$$

$$y^2 = 16.38 - 1.82y$$

$$y^2 + 1.82y = 16.38$$

$$y = 3.24 \text{ inches.}$$

A beam coming within Case 2 or Case 4 could be worked as below (see Fig. 5):—

$$(a) + (b) = (d)$$

$$\times \frac{y}{2} + 14A_{st}(y - d_1) = 15A_s(d - y)$$

$$b y^2 + 28A_{st}(y - d_1) = 30A_s(d - y)$$

$$5y^2 + 16.5(y - d_1) = 17.65(d - y)y$$

$$5y^2 + 16.5y - 33 = 211.8 - 17.65y$$

$$5y^2 + 33.85y = 244.8$$

$$y^2 + 6.77y = 48.9$$

$$y = 4.375 \text{ inches.}$$

As an illustration of a beam coming under case 6 (see Fig. 6) the following will show the method of working:—

$$(b) + (c) = (d)$$

$$A_{st}(y - d_1) + b t \left(y - \frac{t}{2} \right) + \left\{ b_1(y - t) \times \frac{y - t}{2} \right\} = 15A_s(d - y)$$

$$24.65(y - d_1) + b t y - \frac{b t^2}{2} + \frac{b_1 y^2 - 2b_1 y t + b_1 t^2}{2}$$

$$= 47.2(d - y)$$

$$49.3y - 123.1 + 288y - 576 + 9y^2 - 72y + 144 = 1699 - 94.4y$$

$$9y^2 + 359.7y = 2254$$

$$y^2 + 39.9y = 250.4$$

$$y = 5.5 \text{ inches.}$$

This, of course, is the most complicated case, and the formula as shown above takes into consideration the portion of the rib in compression, but the case might be simplified by neglecting the portion of concrete in compression below the slab (as is done in the usual formula for this type of beam), and in that case the second part of formula (c) would be omitted. The working would then be:—

$$14A_{st}(y - d_1) + b t \left(y - \frac{t}{2} \right) = 15A_s(d - y)$$

$$24.65(y - d_1) + b t y - \frac{b t^2}{2} = 47.2(d - y)$$

$$49.3(y - d_1) + 2 b t y - b t^2 = 94.4(d - y)$$

$$49.3y - 123.1 + 288y - 576 = 1699 - 94.4y$$

$$431.7y = 2398.1$$

$$y = 5.55 \text{ inches.}$$

From this it will be seen that in an ordinary case the result of ignoring the small piece of rib in compression is to make the position of the neutral axis slightly lower than it actually is, but obviously the difference is so small as to be negligible, and the formula is much simplified as shown above.

As already pointed out the usual formula for this type of beam, as given in the R.I.B.A. second report and in the L.C.C. Regulations (see Regulation 88 (a)), does ignore this small portion of rib in compression. But at the present day many floors are constructed of a combination of hollow bricks and concrete reinforced with steel rods. This in effect gives a T beam with a large rib and a small slab

(see Fig 2). If the usual formula were applied to such a case, the position of the neutral axis so found would differ very materially from the actual position when the compressive resistance of the rib is taken into account as by the formula here suggested. The writer has found the position in a typical case worked out by both methods to differ by as much as $\frac{3}{4}$ " in a floor 8" deep, which makes the compressive stresses appear much higher than they would really be. The following example illustrates this point. Assume a floor of section as shown in Fig. 3, and assume that the "m" of the combination of brick and concrete is 15, then by the formula given in the Regulations—

$$S_r^2 + 2mr$$

$$2(S_r + mr)$$

the position of the neutral axis would be 3.86 inches from the top of the floor. If the position is worked out by the formula herein suggested, it will be found that the actual position of the neutral axis is 3.1 inches from the top of the floor.

With the position of the neutral axis assumed as by the first formula, when the steel was stressed to 11,700 lbs. per square inch, it would appear that the concrete and brick would be stressed to 930 lbs. per square inch, whereas in view of the

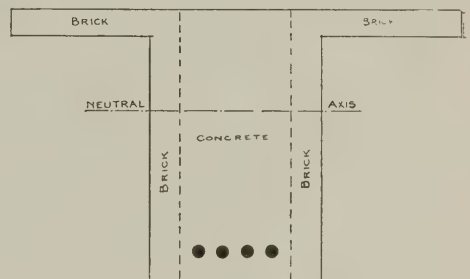


Fig. 2.

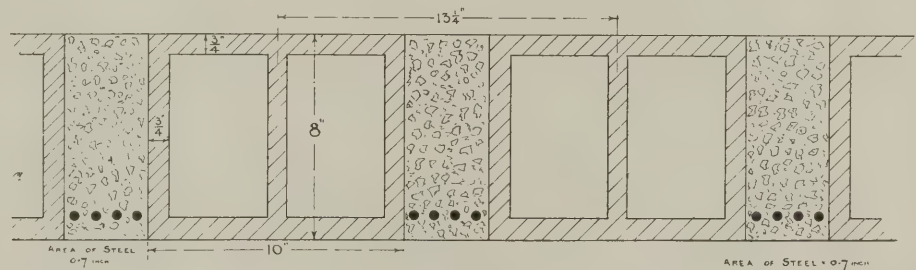


Fig. 3.

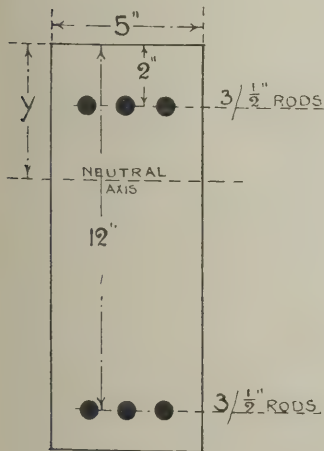


Fig. 5.

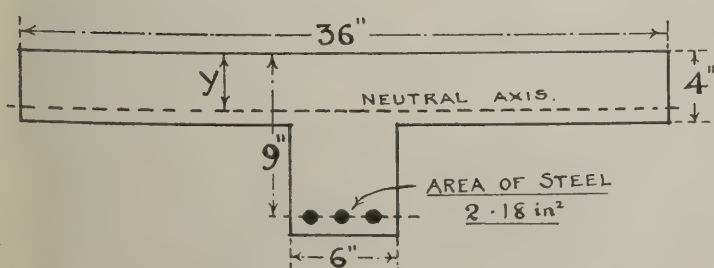


Fig. 4.

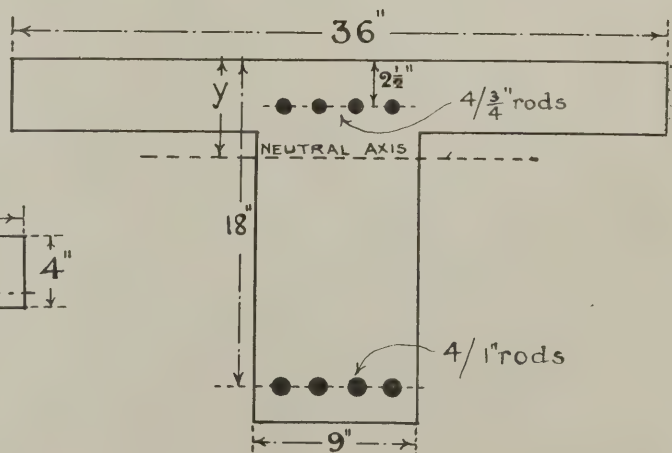


Fig. 6.

real position of the neutral axis the actual stress in the concrete and brick would only be 600 lbs. per square inch.

One advantage of the formulæ here suggested is that the user works with the actual figures of the area of steel and the thickness of slab, etc.; and it is not necessary before using the formulæ to convert the area of the steel into a ratio of the area of the beam, nor to convert the depth of the slab into a factor of the effective depth of the beam.

Another advantage is that the formulæ can be applied to any type of beam consisting of two materials, having different elastic moduli, acting together, such as, for instance, a reinforced concrete beam or floor, a reinforced brick floor, or a flitched beam (which is practically a reinforced timber beam), provided the elastic modulus of the two materials is known.

REINFORCED CONCRETE AS APPLIED TO WATERWORKS CONSTRUCTION.*

BY CHARLES F. MARSH, M.Inst.C.E.,
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Vice-President C.I.

The concrete used for structures which must resist the pressure of water should be richer in cement than that used for the generality of structures.

For reservoirs, tanks, and dams, where there is sufficient thickness, the concrete should be mixed in the proportions of 1: $1\frac{1}{2}$ to 3, or 810 lb. of cement to $13\frac{1}{2}$ cub. ft. of sand and 27 cub. ft. of broken stone or shingle, which mixture is sufficiently watertight for any but very considerable heads, but for pipes and structures of small thickness, say less than 3 in., a mortar mixed in the proportions of 1 to $1\frac{1}{2}$, or 1,620 lb. of cement to 27 cub. ft. of sand, should be used. This mixture is, of course, no more resistant to water pressure than a 1: $1\frac{1}{2}$ to 3 concrete, but in a thin structure there is a danger in the use of stone or shingle, since two pieces may possibly come together, and any failure in the proper consolidation of the concrete may leave a plane of leakage through the concrete. The size of the broken stone or shingle should not exceed such as will pass through a $\frac{3}{4}$ -in. square-meshed sieve, and may with advantage be $\frac{1}{2}$ -in. gauge. It is not advisable to use a richer mixture, as rich mixtures shrink more when drying and expand more when wet than leaner mixtures, and consequently cracks are more likely to be induced, while it has been proved conclusively that with proper care in mixing and placing a mixture in the proportions of 1 to $1\frac{1}{2}$ to 3 is practically impervious under considerable heads.

For pipes under pressures exceeding about 40 ft. special linings should be used, such as the sheet steel tubing in a Bonna pipe or other suitable layer of impervious material.

For any structure which has to resist the percolation of liquids it is advisable, in my opinion, to mix some waterproofing compound with the concrete, or otherwise to provide against leakage by the use of a soap and alum wash, paraffin wax, or other suitable protective coating.

For increasing the imperviousness of concrete or mortar, ordinary hydrated lime has been used very successfully. It can be used in proportions up to 10 per cent.

of the weight of cement without injuriously affecting the strength of the mixture, but 5 per cent. is sufficient for any ordinary purpose.

The concrete should always be kept damp for some time after moulding, depending on the richness of the mixture. The period in the case of a 1: $1\frac{1}{2}$: 3 mixture should be about four weeks.

In structures of considerable length, which may be alternately wet and dry and are exposed to the variations of temperature, it is advisable to provide against cracking, which is almost certain to occur. Such structure should have specially constructed contraction joints not more than 30 ft. apart, leakage being prevented at the joints by the insertion of sheet lead or copper baffles extending well into the concrete on each side of the joint and bent over at the extremities to form a good key.

In the construction of all structures to resist the pressure of liquids, special care is necessary to provide adequate reinforcement against shrinkage due to the setting of the concrete, fall of temperature, and excessive dryness.

Dams.

Dams for impounding water have not been constructed of reinforced concrete in this country to any extent up to the present time, but there have been many cases in America where this material has been used for such dams.

When reinforced concrete is employed for the construction of dams they are usually of a hollow form of construction, having up-stream and down-stream slabs supported on cross walls carried upon a foundation slab.

From the foundation slab a core wall must be carried down under the bottom of the up-stream slab, and extended well into a watertight stratum. The provision of an adequate cut-off wall is most essential as some of the dams already constructed of this material have failed owing to the neglect of this precaution.

The up-stream slab is generally constructed with a flat slope not steeper than 1 to 1, since the flatter the slope the more uniform is the pressure on the base.

An advantage of the hollow type of dam is that the structure is very much lighter, with a consequent reduction of the pressure on the base, whereas with a solid masonry dam the weight of the dam when over a limiting height, depending on the specific gravity of the materials of which it is composed, necessitates an increased widening of the lower portion of the structure in order to keep the pressure within safe limits.

The base slab of a hollow dam is generally formed with holes to allow any water which may gain access under the dam free vent and so obviate any tendency to uplift. The water percolating through the base slab is discharged under the bottom of the down-stream slab to the stream below the dam.

The crest of the dam is formed of such shape as will accommodate the flow of the greatest height of flood which will be allowed to pass over without the formation of a vacuum under the overfall. The down-stream slab is generally constructed of a considerably flatter slope than that usual for solid masonry dams, and the water is consequently conducted to the stream below the dam with less velocity and with a more even flow. This slab frequently terminates before reaching the base of the dam, allowing free access for the water to and from the interior, or sufficient holes are left at its base to effect the same object.

The cross walls or buttresses are stiffened by longitudinal beams, and may

be formed with openings to economize material and give means of access.

There is usually a passage-way through the dam from end to end, and frequently several at various depths. The gear for the outlet and scour valves may be actuated from these passage-ways.

Elevated Tanks.

Perhaps one of the most economical use of reinforced concrete is in the construction of elevated tanks, of which there are many examples in existence. With care and skill in the design these structures may be made quite picturesque features of landscape, and are in any case less objectionable than elevated steel tanks, framed supports. A reinforced concrete tank can be constructed at a cost of from 40 per cent. to 50 per cent. below that of a tank formed of riveted steel plates, and they will in general be less expensive than tanks of pressed steel or cast-iron plates.

When designing circular reinforced concrete tanks it is, in my opinion, advisable to limit the working resistance of the steel to 12,000 lb. per sq. in., since, although the tensile resistance of the concrete is neglected, the elongation of the steel must induce elongation in the concrete, and a higher stress in the steel will in probability cause the concrete to crack. It is also advisable to insert two series of circular rings in the walls of the tank, near each surface, in place of one series at the centre of the thickness. It must be remembered that whereas the interior of the tank is kept at a fairly constant state of moisture and temperature the outside is exposed to the variations in temperature, humidity, and consequently the two surfaces are under very different conditions affecting the expansion and contraction of the concrete.

Cleethorpes water tower, which is believed to be the highest tank in this country, was constructed by the Iron Bar and Concrete Engineering Company and is 174 ft. above ground-level, and has a capacity of 400,000 gallons. The internal diameter is 34 ft. and its depth 42 ft. The tank is of steel and is surrounded by a reinforced concrete mantle wall 3 in. thick, the space between this wall and the steel side of the tank being 2 ft. 6 in. The tower supporting the tank is 18 in. thick at the base and 12 in. at the underside of the tank.

A water tower constructed on the Kew system for the York Waterworks has a capacity of 300,000 gallons and a total height of 118 ft. 6 in., the depth of the tank is 30 ft., and the internal diameter 46 ft. 6 in. The thickness of the circular wall is 9 in. at the bottom, reducing to 6 in. at the top, and the thickness of the bottom is 12 in. A circular shaft 6 ft. in diameter is constructed through the centre of the tank and provides access to the top, which is covered by a dome and lantern. The tank is supported on fourteen columns four in the centre and ten on the outside.

The mixture of concrete used for tanks by Messrs. Coignet is usually in the proportion of 1 to 2 to 4, the inside of tanks being rendered with sand and cement to a thickness of $\frac{1}{2}$ in. for the purpose of securing water-tightness.

In the construction of tanks it is sometimes the practice to render the inside of the tank with sand and cement to which is added a waterproofing compound. Some constructors rely entirely on the imperviousness of the concrete when properly graded, proportioned, mixed, and deposited; others render the inner surface with some retentive composition, such as paraffin wax, while others mix a waterproofing substance with the concrete used in the construction.

* Extracts from a paper read before the Concrete Institute on February 16.

proportion for the concrete most generally adopted for the tank itself is about 1 to 1½ 3, while a mixture in the proportion of about 1 to 2 to 4 is almost universally used for the supporting columns, bracing, and dams, and also for the roof.

Reservoirs Entirely or Partly in the Ground.

In the construction of reservoirs of this nature the question as to the economy or otherwise resulting from the use of reinforced concrete should receive careful consideration before its employment is decided upon. The method of design, if this material is decided upon, will also require careful consideration.

In many cases it is not economical, in my opinion, to use reinforced concrete for walls or floors, but it is almost universally an economical material for roof construction.

If a considerable portion of the depth is low ground the form of retaining wall construction, with a bottom slab at the tank tied to the front slab by ribs, is not an economical form of construction, as the excavations have to be considerably enlarged to accommodate the bottom slab.

A wall designed as a cantilever, supported from the floor of the reservoir, will reduce the excavation, but great care is necessary to provide ample support at the bottom to prevent failure between the base of the wall and the floor when the reservoir is empty.

If the reservoir is covered and the covering can be constructed before an excessive loading is brought upon the walls, the roof beams and similar beams formed in the floor can be constructed to support beams carrying the top and bottom of the wall, which in their turn support the ends of vertical beams between which the walls of the reservoir can be constructed as slabs with horizontal reinforcements.

The covering usually adopted for reservoirs is of the beam and slab type, similar to ordinary floors, and supported by columns, but small circular reservoirs may be covered with a flat dome in a similar manner to that frequently employed for elevated tanks.

Aqueducts.

Reinforced concrete is a suitable material for elevated aqueducts.

Open aqueducts built almost entirely above ground-level and those for carrying water over valleys may, with economy, be constructed of reinforced concrete, but for those constructed mainly below ground-level this material will not be so economical for the same reasons as given in the case of reservoirs.

Pipes.

Pipes under small heads, say up to about 4 ft., may be constructed of reinforced concrete without any special impervious material being embedded in the thickness. For heads over about 40 ft. some special impervious layer is, in my opinion, necessary. The well-known Bonna pipe is a good example of this type of construction. The impervious layer is formed by a thin sheet steel tube with longitudinal welds made by the oxy-acetylene or electric processes. This tube is embedded in the thickness of the concrete with the reinforcement outside for smaller heads and inside and outside for greater heads.

Reinforced concrete pipes when of convenient diameter are moulded vertically, with reinforcement and the steel tube, if this is used, are first placed vertically on a casting, a collapsible steel core is then lowered and fixed accurately in position, around which a detachable iron outer mould is placed around the reinforcement and

The concrete is mixed fairly liquid and is poured into the mould from an elevated staging. While the concrete is being poured the outer mould is struck repeatedly with a hammer to consolidate the concrete and drive out the air.

Pipes up to about 4 ft. in diameter are moulded in advance and the joints formed with a reinforced concrete collar. For low pressures the collars are simply run with cement mortar, but for high pressures the joint is made with a steel corrugated ring into which are driven lead pipes filled with gasket. The collar is then threaded over the joint and run in the usual manner.

Large pipes must be formed *in situ*, and in this case great care must be taken to form a good connection when recommencing the work after a stoppage.

When the pipes are moulded in advance it is advisable to use a quick-setting cement in order that the moulds may be removed without loss of time, so that they may be ready for moulding a fresh pipe as soon as possible.

After the moulds have been removed the pipes are left standing for about five or six days, and are then lowered and left lying horizontally until removed for laying. The pipes should be kept damp for at least one month after the removal of the moulds.

In designing pipes the stress in the steel should be limited to 12,000 lb. per sq. in., and it is advisable to form the reinforcement with outer and inner spirals when the pipes are of large diameter for the same reasons as given previously with respect to elevated circular tanks. The thickness of concrete for pipes may be approximately 1 in. per foot of diameter, with a minimum of 1½ in.

REINFORCED CONCRETE IN SHORE PROTECTION.

Probably no other country has been forced to fight against the inroads of the sea to the extent that Holland has. The peculiar geographical and topographical conditions, with dikes or dunes protecting the lower land behind them, the wide tidal range, the prevalence of severe storms, have all made imperative the study of the best methods of shore protection. A recent report by John W. Thierry, of Haarlem, Netherlands, gives much data relative to new departures in groin construction. A characteristic feature is the growing use of reinforced concrete. In some forms this has already justified itself. In others the experiment to date has been unsuccessful.

This report was written before the occurrence of the recent dam bursts in Holland, and has therefore no direct relation to them. As the problem of preventing coast erosion has been by no means solved for our own country, the experiments here described are of considerable practical interest, and further work of the kind will be followed with sympathetic attention, especially by those who are convinced that it is to reinforced concrete that we must look for the ultimate solution.

In Holland groins have proved the only successful means of flattening the shore and consequently raising the feet of the dunes. Even these have not always proved successful, as some sections of the coast, though defended by groins, have continued to decrease. This points to the fact that the groins were not long enough, and two remedies have been applied: Retiring before the sea, that is, extending the groins landward, and attacking the sea by extending them seaward. The latter

method is much more expensive, but is more effective, and is imperative where the dunes are too narrow to permit any further loss.

Beginning in the eighteenth century forty-six groins have been built along the Dutch coast between Hook van Holland and Scheveningen, a distance of 21 km. (about 13 miles).

Reinforced-concrete beams were adopted in 1906 at the Hondsbossche Dam in place of the basalt pitching or paving for the side parts of the groins. They can be used only where they can be shut up between piles. In a groin constructed at this point in 1912, both reinforced concrete beams and reinforced concrete slabs were employed. At the landward end the centre beams disappear, and the middle part is composed of concrete slabs held by a notch beam and groove beams.

The groin was very successful in building up the beach. During a severe gale last winter, however, it was severely damaged. For a distance of 200 ft. all the beams in the narrowest section were torn away. Probably the heavy wave impact transmitted through the interstices between the beams lifted up the notch beam. Consequently all the beams worked loose and were thrown up on the shore. Within six days, however, the whole groin was repaired with the old beams, only six or seven of which were broken or lost. To prevent recurrence of the damage the notch beams were tied down with ¾-in. rods connecting piles driven into the body of the groin at the ends of the beams.

In 1910 there was applied to the land end of the groins a reinforced-concrete construction consisting of slabs in the form of a vault, supported by side beams and kept in place by heavy cross beams. Under the side beams were beams of fascine work. This construction was not a success, as the gales undermined the fascines and threatened the side beams. Consequently the seaward end of the land section was changed in 1912 in the new groins to a new design. Over a length of about 50 ft. the beams were replaced by sheet piling, but side beams were retained for the remainder of the inner end. During the last winter, however, the side beams landward of the sheet piling were severely injured, and it was decided to turn back to the fascine construction.

There is a remarkable phenomenon connected with the construction of groins on a sandy shore. The unprotected shore at the ends of a set of groins is eroded more strongly after than before the coast was defended. This is probably caused by the currents along the coast, which are diverted from their course by the groins, and which, when they have reached the last groin, turn toward the shore and erode it. Because of this the provincial government of Zuid-Holland has forbidden the lengthening of any more groins on the Delfland coast.

The Largest Printing Room.

An event of considerable interest to the printing and allied trades throughout the country is the removal of the printing works of Messrs. W. H. Smith and Son from Fetter Lane to Stamford Street, S.E. The removal has occupied between three and four months. Messrs. Smith's new building is on an island site, and is three times the size of their Fetter Lane establishment. It is a four-storeyed structure, covering an acre of ground, and possesses the largest room devoted to printing in England. There are in this room 24,700 sq. ft. of working space. The plant comprises more than 200 machines.

STRENGTH OF SLAG CONCRETE.

Results of a series of compressive tests of standard cylinders at various ages from one month to one year show consistently higher strength for 1 : 2 : 4 concrete with slag for large aggregate than for a concrete with trap-rock aggregate graded for comparison to conform to the slag. The cement was a mixture of three standard brands. The sand was a typical "Cow Boy" sand from Long Island. Four specimens were tested for each case and the averages are given in the accompanying table, including the percentage which the average strength of the slag concrete exceeded that of the ordinary trap-rock concrete.

ULTIMATE COMPRESSIVE STRENGTH OF 8 BY 16-INCH STANDARD CYLINDERS.

Each value, in pounds per square inch, is the average of four specimens.

	Age in months.			
	1	3	6	12
National slag concrete ...	2,465	3,496	3,567	4,187
Palisade trap rock concrete	1,975	2,961	4,053	3,537
Percentage excess in strength	24.8	18.0	16.9	18.4

The average weight of the slag concrete was 140 lb. per cubic foot and that of the trap-rock concrete 151 lb., while the average weight of the slag was 80 lb. and of the trap rock 100 lb. Tests of the modulus of elasticity were made on three cylinders of each kind, using average values below 650 lb. unit stress, the results were 4,126,000 for slag concrete and 4,036,000 for trap-rock concrete.

The tests were conducted at the laboratory of Columbia University and witnessed by representatives of the New York building bureaus, the Newark Building Department, the Erie Railroad, the New York Public Service Commission, First District, and the New Jersey Board of Public Utility Commissioners.

TRADE AND CRAFT.

A New Type of Gas Cooker.

A demonstration of the capabilities of the "Barrister" gas cooker was given at Palace Chambers, Westminster, on February 23 to members of the technical Press. Mr. William Lawton, the inventor and patentee, from whom Messrs. Summerscales, Limited, 4, Central Buildings, Westminster, have acquired the right to manufacture and sell the cooker, was present to explain its principles and to show it in operation. Very little explanation, indeed, was necessary, the construction of the apparatus being clearly visible in every detail and its functions made manifest no less palpably.

Novel in type, the cooker is very simple in construction. An oblong dish forming the base is enclosed by a block-tin fence, which at the angles is jointed for folding. Midway of this fence and set transversely is the burner whence spring perpendicularly seven jets of flame, having on one side of them a radiating screen which keeps them steady, diffuses the heat, and divides the cooker into two compartments, each capable of cooking, but the one to which the jets are naked being of course the hotter of the two. At the top of the fence is placed a steel grid on which boiling, stewing, or any kind of cooking that can be done with bottom-heat, goes on simultaneously with the roasting of the meat in the ovens below. We say "roasting," because that is obviously a more appropriate term than baking, by which one understands the function of a closed oven, whereas the "Barrister," as we have already stated, is entirely open at the top and is also partly

open at the front, so that the object that is cooking is completely visible. This is an obvious advantage, but what is of greater importance is the wholesomeness of the open-fire system and the greatly superior flavour of roasted meat compared with that which is baked. Any cooking operation—roasting, baking, frying, grilling, and boiling—can be done simultaneously and is well within the scope of this apparatus, of which one great merit is its portability. Within one minute it can be taken to pieces and all its elements lodged within the depth of the oblong shallow dish that forms its base. Its total weight is less than 5 lb. and, in the dissection, every particle of surface is accessible for cleaning. In fact, the whole thing could be easily boiled in a small copper. Gas consumption is, we were assured, an extremely low charge on the service rendered.

The demonstration left no doubt as to the entire efficiency of the "Barrister" cooker. Its extremely low cost puts it within the reach of every cottager, while its portability—we have mentioned that it weighs only 5 lb. and can be folded up into small compass—renders it particularly suitable for small flats or apartments, no floor-space being required. The apparatus can be placed on a table in any convenient position, as it is perfectly independent of all fitting or setting, the gas being conveyed to it by means of a flexible tube. As seen at work, cooking a six-course dinner for six persons, the cooker created a very favourable impression.

FIRE PROTECTION OF CHURCHES.

In view of the dangers threatening our venerable churches by fire, Mr. C. V. Goddard, hon. secretary of Salisbury Diocesan Church Building Committee for Wilts, calls attention to some suggestions made by Mr. W. D. Caröe, F.R.I.B.A., in the "Church Builder" for January. He advises that buckets of water should be kept in the ringing-chamber and near the organ. (It will be recollected that the fire which destroyed Selby Abbey originated in the organ). Also that there should be permanent boxes or buckets of sand kept ready, as sand is a valuable extinguisher, especially in the case of burning oil. Sand, unlike water, requires no attention. It should be the duty of an official, such as the steeple-keeper or organist, to keep the water-buckets full. And now that electric torches are so easily obtained, no other portable light should be allowed in the bell-lofts or roofs.

"If there be a naked flue (of iron or earthenware) in the tower it should be examined at least once a year before the lighting of the winter fires." Cement joints in pipes are apt to give way and pipes to crack. The writer remembers finding an iron flue-pipe running up through the floors and chambers of a tower with a large crack in it and inflammable rubbish resting against it, of which facts the churchwardens and sexton seemed quite unaware! One would suspect that fires are often caused not so much by "the overheating of a flue" as by lack of common care and attention in fixing, examining, and sweeping. Great carelessness is often shown in not isolating iron flues within ware pipes, or otherwise, when they pass timber or go through roofs. The question may be asked, How does a flue get "overheated"? But if this is possible precautions should always be taken.

NEW ROYAL BATHS OF BATH.

Field-Marshal Viscount French opened at Bath, last Wednesday, the new set of baths, which the corporation has reconstructed at great expense. His lordship was the guest of honour at a luncheon at the Guildhall, where he made an interesting speech in response to the toast "His Majesty's Forces," proposed by Mayor (Alderman H. T. Hatt). He how delighted he was to have that opportunity of recognising the generosity of the corporation to the Army in throwing its famous mineral baths for the benefit of disabled soldiers.

The old entrance to the baths has been converted into a window, and a new entrance, with draught-proof, revolving doors, which slide back to admit a wheelchair, has been formed where the old entrance to the ticket office was. An open-air canopy has been erected to protect bathers from alighting from carriages and to draw attention to the baths. A projecting canopy has been taken off 15, Bath Street and an attractive hall secured instead of the dark passage. This hall serves as a waiting lounge for visitors about to bathe for their friends, and allow the corporation room to fulfil its proper purpose of a rest-room. The corridor and all the dressing-rooms and dressing-rooms are laid with black and white vitreous tiles, and the walls are covered with glass mosaic. The baths include three deep (two fitted with chairs), three reclining rooms for spa-douches, six massage, two for radiant heat, and a plombières room. Almost every bathroom has two and sometimes three dressing rooms, according to the length of the treatment. The supply pipes used for the treatment are carried through the rooms just below the ceiling under a metal cornice, being in lead pipes frequently leaked, and the supply pipes are now in a subway running underneath the corridor, and can be easily reached for repairs. In the new baths the steps are of aluminium. The seats in the reclining baths are raised a few inches and non-slip tiles put in the floor of the baths. Mr. A. J. Taylor is the architect, and the main contract was carried out by Messrs. J. Long and Sons.

Northern Architectural Association.

The third ordinary meeting of the association of this association will be held on Wednesday, March 8, at 4.30 p.m., at Higham Place, Newcastle-upon-Tyne. It is proposed to hold the annual general meeting on March 29. The latest date for sending in nominations for the council is March 8.

Business Change.

We are informed that Mr. Alfred R. son, who recently was the London manager for Messrs. L. G. Mouton and Partners (Hennebique System of Reinforced Concrete), by whom he has been engaged for the past nine years, has severed his connection with that firm and has joined the staff of the Trust Concrete Steel Company, Limited (Hennebique System of Reinforced Concrete).

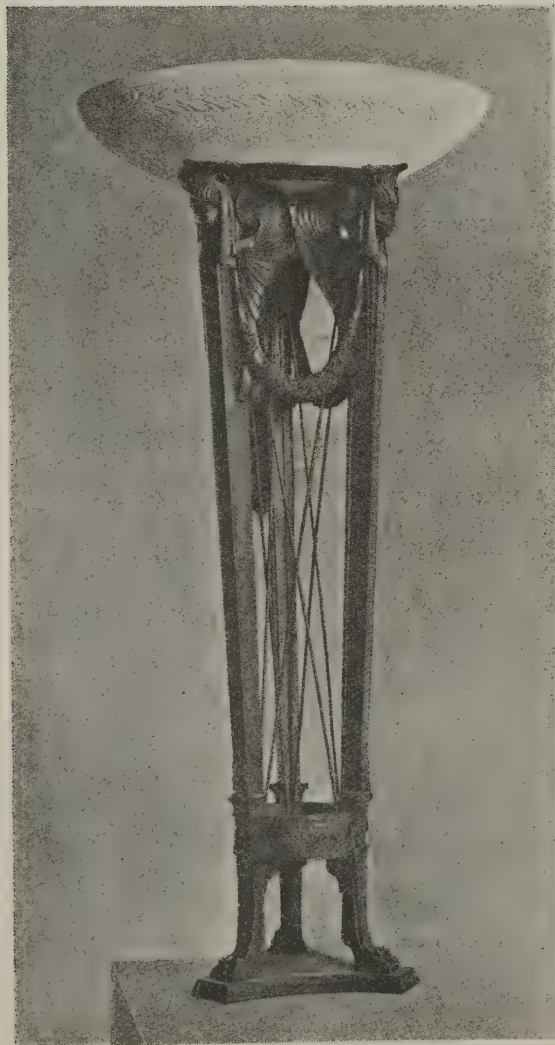
Wages Advance at Bury.

Labourers engaged in the building in Bury and district have been granted increases of wages, yard labourers and crane men from 5½d. to 6½d. per hour, navvies and general labourers 6d. to 7d., and stone saw attendants, steam men, bricklayer's plasterers, and slaters labourers 7d. to 7½d. per hour. In accordance with an agreement made two years ago the painters in Bury and district receive an advance from 9d. to 9½d. per hour from March 1.

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TRIPOD IN THE TEMPLE OF THE SCOTTISH RITE, WASHINGTON, U.S.A.

JOHN RUSSELL POPE, ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

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EDITORIAL.

STRIKES and lockouts always place the architect in a peculiarly unfortunate position. He is no party to them, and is nevertheless one of the chief sufferers from them. Sometimes the builder also can join him in a vehement "A plague on both your houses"; for a fruitful occasion of delay has been some wretched demarcation dispute, in which work was brought to a standstill because two or more rival trade unions claimed the sole right to do it. In early days, a rash employer would occasionally attempt to decide the question as to whether the job belonged to the carpenter or to the cabinetmaker, to the bricklayer or to the plasterer, to the plumber or to the gas-fitter, and so on through all the interesting permutations of which nearly a score of more or less overlapping trades are capable. If he dared to decide in favour of one union, all the other unions promptly struck, and, as likely as not, the favoured union would strike in sympathy, thus evolving a situation that, while decidedly Gilbertian, was nevertheless distinctly exasperating.

* * * *

Very soon, therefore, the employer realised the wisdom of neutrality. It was nevertheless intolerable that he, and the architect, and the building owner, should be compelled to bear with a patient shrug the evils of a delay that sometimes ran into months; and it was ridiculous and wicked that the unions should be able to inflict upon each other, as well as upon inoffensive neutrals, losses that were as irretrievable as unnecessary. At length it was resolved to try whether the excellent system of conciliation which had proved successful in ordinary disputes between employers and employees could be adapted to demarcation troubles. Accordingly, a scheme has been elaborated, and "rules for the establishment and Governance of Demarcation Committees in the Building Trades" were agreed to at a meeting of employers and operatives held in London on December 13, 1915. It is exhilarating to see, from the list of signatories, that almost all the interests that can possibly clash are here for once in agreement; the gist of their eirenicon being thus formally expressed: "The Federations and Societies, recognising that it is in the best interests of all parties that arrangements should be made whereby all questions or disputes relating to demarcation of work that may from time to time arise between the parties or any of them may be referred to standing joint committees for adjustment with a view to an amicable settlement of the same without resorting to strikes or lockouts, hereby agree," etc.

* * * *

In the first instance, any demarcation dispute is to be submitted to a joint local trade committee, consisting of representatives of the employers and operatives of the trades affected, and, pending decision, there is to be no stoppage of work. Failing settlement by the

trade committee, the dispute is to be referred to a local demarcation committee comprising representatives not merely of the trades directly affected, but of all trades that are parties to the agreement; roughly speaking, it is the difference between a special and a mixed committee. Appeal lies to a Centre Demarcation Committee, which derives its name and its constitution from the wider area (as compared with a local committee) comprehended by a "centre" of the National Federation; a "centre," it may be assumed, comprising several local associations, and therefore assuring for the Centre Committee a more judicial standing, because of the comparative detachment of many of its units. There is here, it will be perceived, a rough correspondence to legal procedure (with a court of first instance, higher court, and court of appeal), and the resemblance is further developed by providing for a court of final appeal, the House of Lords being in this scheme a National Demarcation Committee, consisting of not exceeding two representatives from the general union of each of the operative trades who are parties to the agreement, and a like number of employers elected by the national federations or associations of employers who are also parties to it. In one important respect legal precedent is not to be followed. The rule is to be no forensic long-windedness. Ten minutes' talk must suffice the mover of a resolution, five minutes each the seconder and other speakers: any extension being only permissible by special resolution.

* * * *

In the erection of the machinery of conciliation, the National Federation of Building Trades Employers has set an example to which it is opportune to draw attention. Our country, as the cradle of trade unionism, has suffered vastly more than any other nation from a prodigious wastage on strikes and lockouts. We can no longer afford to indulge in this recklessly extravagant form of sport. Unquestionably the building trades conciliation boards have been highly successful in the maintenance of industrial peace within their own borders, and it may be claimed for them inferentially that they have been not only remedial, but prophylactic. By bringing together employer and employee in frequent conference, they have swept away much mutual misunderstanding, and have substituted calm deliberation for passionate prejudice. They have, in a manner, and in however slight a degree, asserted the wisdom of the nation as against the merely parochial view, and have asserted it so successfully as to prepare the way for extension of a principle that may well form the basis of that national solidarity which is essential to industrial economy, and without which we can have no rational hope of recovering our commercial supremacy in the world's markets.

Mrs. Sidney Webb, D.Litt., in the course of a lecture "Professional Organisation" at the London School of Economics, traced in brief the evolution of architectural education. First, in 1791, there was the Architects' Club, which, being a club, did not, we may be sure, burden itself overmuch with educational pretensions, though no doubt it talked an infinite deal of nonsense about art. When, in 1834, the R.I.B.A. was established, its founders were chiefly intrigued with social status. Nothing mattered much if only the profession were kept "genteel"—a word of might before it degenerated into a derision. There was also, according to Mrs. Webb, "a conception that architecture was an art and not a science, and that architecture was not for buildings of common use, like factories or railway stations, but should be limited to the palaces." At this theory broke down, Mrs. Webb is represented by a rather syncopated report as saying, "was due to the arrival of materials like concrete and steel, which required technical knowledge, and the general development of building and sanitation—a statement that seems to range the several influences in inverse order of occurrence."

Mrs. Webb imputes to the R.I.B.A. of the days of our fathers a dislike of examinations and even of systematic education; for, it was asked, "How can anyone examine in art?" Like jesting Pilate, the propounders of this insinuating question waited not for an answer, which, however, was in due time supplied within their own precincts. For in 1877 the Institute accepted, from 1884 enjoined, and in 1891 insisted upon "the principle" of examination for the Associateship, thus furnishing, it may be hoped, a satisfactory reply to their own sphinx-like riddle—if, indeed, it was their own, or that of their forerunners and not, as we suspect it was, a catch-phrase generally current in the day of revolt from the grinding tyranny of rampant commercialism.

It may be conjectured, also, that Mrs. Webb's citations about architecture as being not a science, but an art inapplicable to factories and railway stations, has been in like manner condensed from the steaming atmosphere of mid-Victorian days, rather than collected in concrete form from the annals of Conduit Street, and that here, again, we get recoil from excruciating commercialism, reaction from one extreme to another. To-day—even in the exigencies of war-time, architectural opinion does not wholly abandon the factory to Satan, and is rather solicitous about the parlous state of British railway stations; as, indeed, it always has been—with intervals of vacillation and despair—since Hardwick put up his gracious Greek gateway at Euston, which stands as at once an admonition and a reproach, since the fine tradition it established is now followed mainly in France and America. Mrs. Sidney Webb is to be thanked for affording us this glimpse of ourselves as others see us.

A refreshing example of leniency in the matter of suspended contracts comes from Salisbury, and we are glad to note that an architect was the prime mover in it. Reporting to the Buildings Sub-Committee for the Wilts Asylum extension, Mr. Pegg, one of the architects, indicated two courses that were open with respect to the work that had been suspended. Either the building owners could pay for the work done and terminate the contracts, or they could keep the contracts alive by paying interest on such capital as had been sunk in them. On the grounds of greater safety and convenience, and probable ultimate economy, he recommended the latter course, which was provisionally adopted. In addition to the amount legally payable under the contract, one firm of contractors are to receive about £500 on account of

material on the site and interest on the reserved sum of £1,000, the value of the material on the site and at their shops, and the value of such plant as will be ultimately required but cannot be temporarily removed without excessive expense. The question of allowances to be made on restarting the work in respect of possible increase or decrease in the cost of labour and materials is to stand over until the data become definitely ascertainable. Similar treatment was accorded to another firm engaged on the same work. It is mere justice, but was so gracefully and ungrudgingly proffered as to throw it into strong contrast with the too numerous cases in which building owners, public and private, have shown a plentiful lack of sympathy for the war-time troubles of the builder.

Any instance of the linking-up of scattered educational forces is welcome for its practical recognition of the necessity for unity of aim and effort, although of course there is always the lurking danger that palliation may postpone radical cure. At all events, one is gratified to learn that the Department of Architecture of the Leeds School of Art has been placed on the list of architectural schools "recognised" by the Royal Institute of British Architects, with the consequence that students passing satisfactorily through a prescribed course of study at the school become exempt from the R.I.B.A. Intermediate examination. By increasing its responsibilities in this way, the Institute is further confirming its authority in such matters, and is ripening for the position we may hope to see it occupy ere long in relation to the universities. Like certain of the medical schools, it should assume university standing, with a voice in the granting of degrees. How this voice is to be heard—whether by the co-optation or election of members to represent it on university senates, or, contrariwise, by the representation on its Board of Education of university delegates, with power to grant exemptions from certain university courses leading up to degrees—is simply a question of detail into which it would be both premature and presumptuous to enter; but we feel that, in the present upheaval of events, the Institute has a splendid opportunity of revising its system of education on university lines.

Professor Harrower's lecture on "The Unity of Greek Art," delivered before the Aberdeen Architectural Association, and summarised in another part of the present issue, is, in effect, an admirable restatement of the case for Greek architecture. On this subject there was, of course, nothing new to be said, but the lecturer has reiterated some of the old truths with uncommon clearness and force. One point, especially, he brings into unwonted prominence. He insists on the essentially religious inspiration of Greek art—that it was "permeated throughout with religion and morality"—a proposition which will stagger the Goths, who so confidently claim a monopoly in that kind. They will probably object to the use of the words "religious" and "religion," but the larger view will remain with Professor Harrower, to whose lecture the reader is referred for a most interesting and suggestive recapitulation in racy popular language, of some of the basic principles of Greek art.

TO OUR READERS.

In view of the Government restrictions on the imports of paper and pulp, readers are requested to obtain their copies of this Journal from one source, by placing a regular order with a newsagent, instead of buying copies haphazard; in this way they will reduce the wastage of copies, and so enable us to do our part in the present effort for national economy.

HERE AND THERE.

GHOSTS you can make fun with, if you will; but not Shades. Even the most ordinary of mortals becomes awe-inspiring when "wropt in mystery." He has gone beyond the crushing influence of your most superior manner. Scrooge might have stood up well against his partner of flesh and blood, but he made a very poor show when it came to arguing with the Shade of Marley. And if a prosaic person like a lawyer of the old school can become so immensely impressive as an Astral Body, what of the clever ones of the earth? James McNeill Whistler was among the cleverest of the clever, and bearing that in mind I am going to be very humble over this message which comes to me on a postcard, over the well-known sign of the butterfly: "The Shade of Mr. Whistler presents his compliments to the author of 'Here and There,' and begs to state that he cannot allow his *mots* to be put in the mouth of Mr. Ruskin. Mr. Whistler would counsel 'Ubique' to re-read 'The Gentle Art of Making Enemies,' and take timely warning from the fate of the latter." I had begun a paragraph thus—Ruskin, you will remember, said that Whistler knew no more about pictures than the policeman on beat in the gallery. But it was Whistler who said that about Ruskin, after Ruskin had accused Whistler of throwing a paint-brush (or a pot of paint, I forget which) in the face of the public. I offer my apologies to the Shade, who, when on earth, claimed a monopoly of all the best *mots*, and apparently still asserts his claim. Unfortunately I have not by me a copy of his "Gentle Art," and so am unable to turn to the passage of caustic words between the art critic and the artist. But I remember the vein of sparkling viciousness running through its paragraphs, which were printed in microscopic type on pages with very wide margins, and when I had come to the end of all this waspishness in print, I felt what an exceedingly clever fellow Whistler must have been, and what an extremely unpleasant man to live with. He made enemies all round him, and, according to his own account, always had the best of his encounters with them. Still, I am gratified to find that I am read by the Shade of the man who said "A poor thing, Oscar, but at least your own," and I can only hope, in these times of national economy, that he is getting his Journal at one regular newsagent's, and not buying it haphazard in one or other of the Regions Beyond.

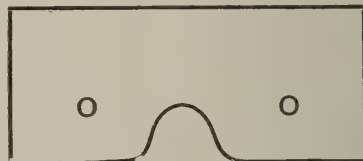
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When the time comes, which is not now, a rich altruist must be sought out, and, instead of allowing him to spend his money on the provision of libraries galore, he must be got under the spell of an enlightened Committee of Good Taste, so that all his wealth can be poured into the production of a set of copy-books for manufacturers. I have long been convinced that it is not the public who need first to be educated in good taste in their furnishings and the general equipment of their houses, but the manufacturers. People can only buy what the shops offer them, and though the shops may reply that they can only sell what the public will buy, they know very well that they are in the position of dictator, and ultimately we come down to the manufacturer. It is here the rich altruist and the Committee of Good Taste appear upon the scene. After infinite trouble and consideration, they get together a series of portfolios giving working drawings of admirable examples, whether these be of candlesticks, sideboards, inkstands, or fire-irons, and they shower them upon the manufacturer free of all charge, in the hope that he will copy some of these good examples. In the early days of the Renaissance the

masons used to have such copy-books, and in the eighteenth century there were many others. This is but the revival of an old idea. You have only to pick up a catalogue of Old Sheffield Plate to see what splendid possibilities there are in it. But the main difficulty would be to find the rich altruist. I should have to be a cross between Tolstoy and Emerson, Burlington and Andrew Carnegie, with a dash perhaps of Mr. Selfridge and President Wilson. And, the Americans might say, you are up against a stiff proposition there.

* * * *

Firegrates, undoubtedly, come within the scope of these notes, and firegrates were made for fire and not to look at. And fires mean coal, which is very expensive just now. So most profitably we must consider the suggestion which reaches me from my correspondent (Mr. T. P. Ritzema, of Blackburn). You take a firebrick, he says, costing twopence, and with the aid of a small sharp chisel and a hammer you cut two holes through it, about an inch in diameter, and then you hollow out the underside of the middle like this—



"The brick is placed on its side one or two inches from the back of the fire, according to the space between the grate, and the fire made in the ordinary way. If the grate has open fire-bars at the bottom the brick should be covered over with a thin fire slab, which can be procured from ironmongers. One or two bricks should be left open at the front to allow the ash to fall through. Treated in this way fires will throw out a great heat and gradually die down to white ash, the firebrick remaining red hot. A small supply of coal or cinders should then be thrown over the hot ash, and in a few minutes there will be a bright glowing fire, with little or no smoke. This will become red hot, and die down again to white ash when the fire will have to be made up once more with a small supply of fuel. From 25 to 50 per cent. of fuel can be saved, according to the care used in making up the fire. Nuts or cinders will burn as equally well as the best household coal. Not least of the advantages of using the brick is the absence of smoke after the fire is lit. There is no patent in the idea. Anyone can use it. A similar brick is already used as a fixture in some grates for the purpose of heating a boiler at the back of the fire. It is not, however, nearly so effective as when it is brought out a few inches. The Durham and Northumberland miners have used firebricks with holes in them for generations. This enables them to burn the breeze supplied to them from the coal-lieries." I have not tried this brick, but many readers who are concerned with coal bills will doubtless like to do so. It is my own experience that makers of firegrates for ordinary rooms, and especially makers of kitchen ranges, seem to be gloriously serene to the coal-burning capacities of the ordinary maid. The fire-space in their grates is so ample that scuttles of coal vanish with incredible rapidity. And having found out that fact, the household promptly goes off to the ironmonger for firebricks with which to reduce the yawning chasm. But these can only be regarded as a makeshift, whereas the brick described above seems to be really a very effective device.

UBIQUE.

THE PLATES.

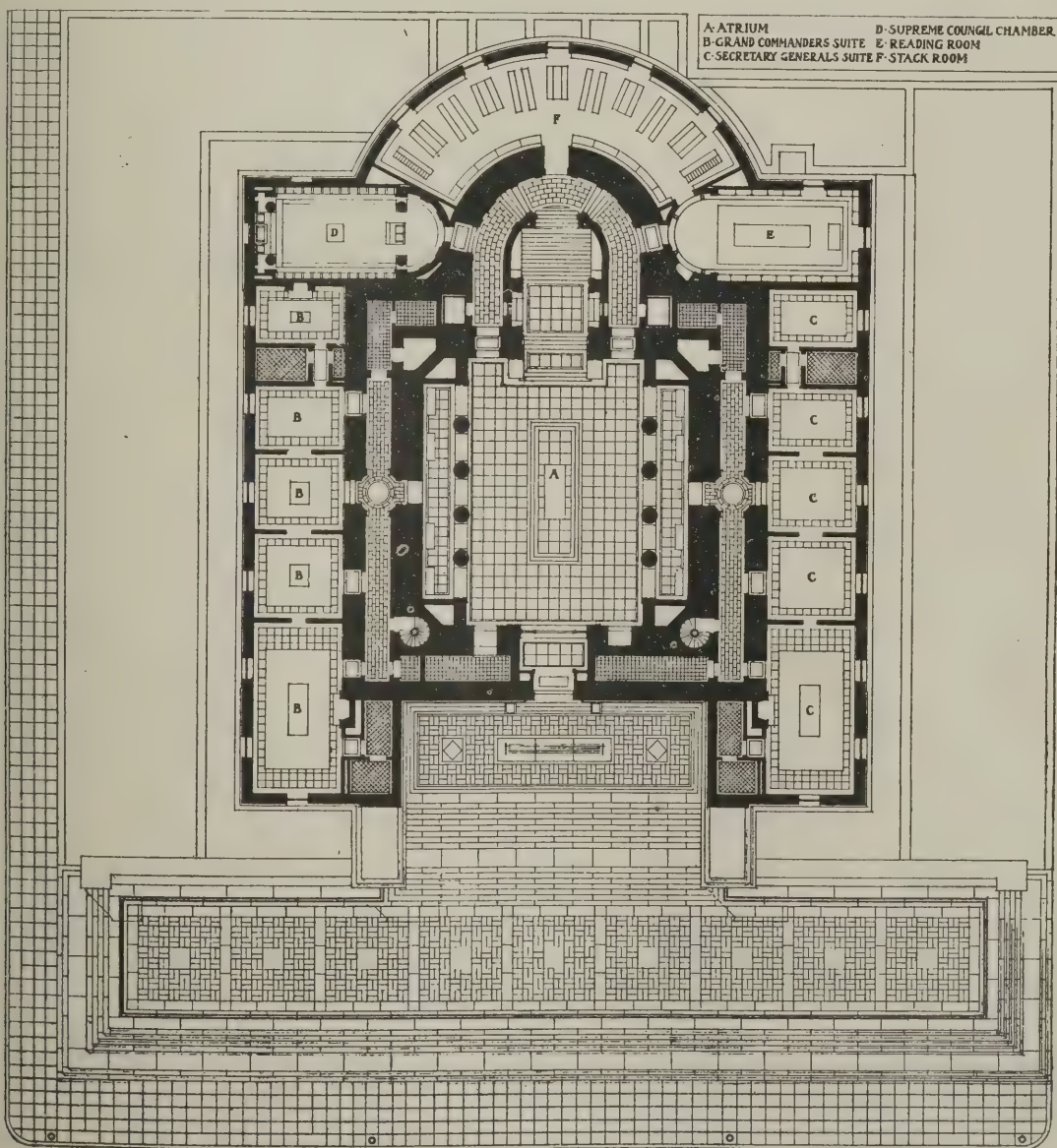
Temple of the Scottish Rite, Washington.

UR plates of this most striking building by Mr. John Russell Pope are reproduced from the last issue of the "Architectural Review," of Boston. The building stands upon a site about 250 ft. square, and masses up impressively from all four sides. Granite steps lead up from the lower platform, rising in groups of three, five, seven and nine, to the terrace in front of the entrance, and the monolithic columns above are 33 ft. in height and just thirty-three in number—all in accordance with masonic symbolism. On either side of the upper flight of steps are two sphinxes, by Mr. Weinman, symbolising "Power" and "Wisdom," and across the platform in front of the main doorway is the following inscription in letters of bronze: "The temple of the Supreme Council of the Thirty-third degree of the Ancient and Accepted Scottish Rite of Freemasonry for the Southern Jurisdiction of the United States. Erected to God and dedicated to the service of Humanity. Salve Frater!" Externally, the design is based on the Mausoleum of Halicarnassus. In the entrance floor the central space, practically a large hall, is termed the atrium, and from the side opposite the entrance doorway rises the staircase to the

floor above; at the rear is a stack-room (with bronze stacks) containing a rare and unique collection of books on masonic lore; while to right and left of the staircase are the reading-room and the Supreme Council Chamber. The atrium is flanked by two suites of offices, one for the use of the Sovereign Grand Commander, the other for the Secretary General. The basement beneath the atrium contains a large banquet-room with offices, kitchens, etc., and in the sub-basement an elaborate mechanical plant is installed.

The staircase, as it rises from the entrance floor, divides into two side flights to reach the landing in front of the Temple Room. The entire upper portion of the structure is devoted to this room, the only other feature of importance being the organ, which is absolutely hidden, being placed in the roof-space over the staircase, opening into the room through a grille in the domed ceiling. The music pervades the room, not seeming to come from any definite direction. The principal use of the Temple Room is to provide accommodation for the impressive ceremonies that take place actually only every other year, but it will often be used for other masonic rites, and the offices will, of course, be made use of at all times in carrying on the work of the Council.

In the atrium the walls are of limestone, with the



TEMPLE OF THE SCOTTISH RITE, WASHINGTON: PRINCIPAL FLOOR PLAN.

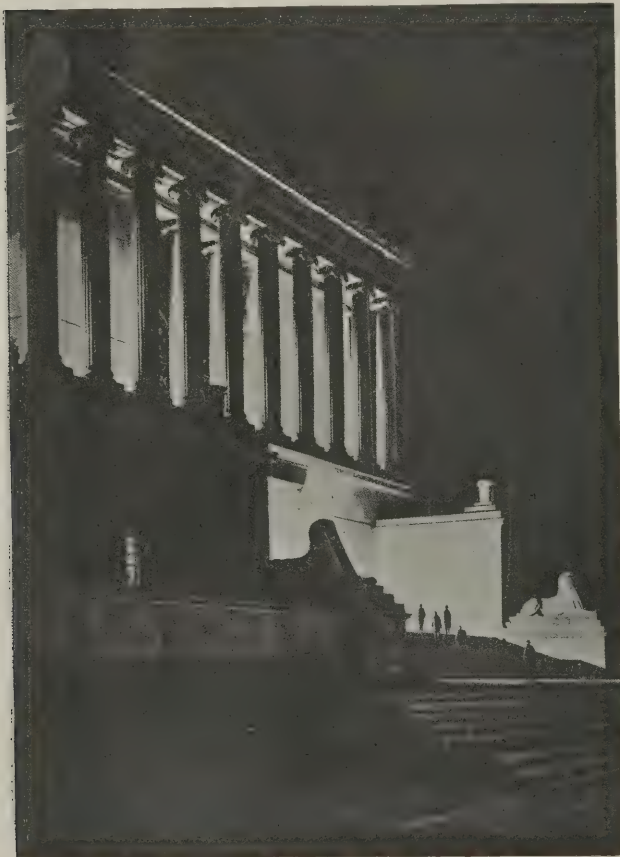
JOHN RUSSELL POPE, ARCHITECT.

recesses plastered and tinted a tannish tone, above a marble dado; the frieze is painted with Greek decoration. The ceiling is finished with heavy beams of oak brilliantly touched in with a coloured decoration that reiterates Greek forms while repeating tones that are found on the outer cases of Egyptian sarcophagi. The recess behind the four huge polished green Doric columns of Windsor granite extends down both sides of the room. The floor is of Tavernelle marble, with a border and a centre of Tinos. Upon the floor rests a huge table of Pavonazzo, matching the seats in the aisles on either side.

The War having made it impossible to get certain European marbles—particularly the black marble ordinarily obtained from Belgium—it was necessary to find American substitutes. A Virginia quarry, never worked for this purpose before, was opened, and provided material which is fully equal in appearance to the imported marble.

For the Temple Room substantially the same materials are used: green Windsor granite for the ten columns, walnut for the furniture, a polished black marble mosaic floor, with white mosaic border and lines of inlaid bronze, and a central altar of black and gold on a black marble step. The walls are of limestone to the top of the entablature, which is highly ornamental and carries a black marble frieze inscribed with a bronze lettered inscription. Above this is a painted plaster dome. Except for the canopies over the thrones, woven materials have generally been set aside for others more permanent; leather, for instance, being frequently substituted.

It is interesting to learn that not only the general scheme but everything in the building was especially designed and made under the architect's direction. The fixtures, the furniture, the rugs, were elaborately studied and carefully worked out in this way. In the earlier studies the Temple Room was enclosed with



TEMPLE OF THE SCOTTISH RITE, WASHINGTON:
THE FRONT LIGHTED AT NIGHT.

solid walls, in front of which ranged the columns of the main colonnade. As the sketches progressed, however, these walls were opened out, providing space for the bronze grilles shown in the photograph and, incidentally, also providing the opportunity for most unusual and beautiful lighting scheme. The room can be lighted in a variety of ways: from the bowls of the floor standaras, from coloured lights placed in the top of the dado between the columns, which supplement the bowl illumination with greater volume of light and differing tones, from the glass skylight from a recess above the cornice, and, finally, perhaps most weirdly of all, from the lights placed the back of the colonnade outside the grilled windows. The illustration on this page shows the front of the building when lighted up at night. It then has an especially arresting appearance.

Sculpture at the Hôtel Carnavalet, Paris.

The Hôtel Carnavalet comprises two courts surrounded by buildings. The first or entrance court is the original, embellished with sculptures by Goussier. The second or garden court is a formation of the nineteenth century, being made up of fragments of buildings of Paris which had to be pulled down because they stood in the way of public improvements. The work was commenced by M. Roguet in 1870 and completed by M. Bouvard in 1889. The earliest of these relics of old Paris is the archway pavilion on the south side, which was built about the middle of the sixteenth century in the precincts of the Palais de Justice and was known as the Arc de Nazaire attributed to Jean Bullant. The central portion of the opposite side of the court consists of a charming pavilion of the Louis XV. period which formed part of the mansion of the Choiseul family in what is now the Rue du 4 Septembre. The west side of the court includes the façade of the hall of the Pavillon de la Draperie, disturbed by Baron Haussmann's improvements, and it is this façade that bears the sculptures which we illustrate. The Merchant Drapers were the first and most powerful of the six guilds into which the traders of Paris were organised under the Monarchy. They rebuilt their hall in 1650, employing as the architect Jacques Bruand, brother of the more celebrated Libéral Bruand who designed the Invalides and the Salpêtrière. The building stood near the central markets, and was cleared away when the Fêtes Halles was formed in 1868. The sculptures which appear on contemporary prints had perished before that time, and those which now adorn the front are a restoration. They are an admirable example of modern craftsmanship.

House on Holywell Hill, St. Albans.

This is the most refined house in St. Albans. It was built in 1785 in the vernacular style practised by Brothers Adam, Sir Robert Taylor, and Thomas Leverton. The materials used are warm-coloured stock bricks with patent stone dressings—probably Coade's. In this façade is to be seen a reflex of the treatment accorded to the London town house of the late eighteenth century.

Lounge, Ritz Hotel, London.

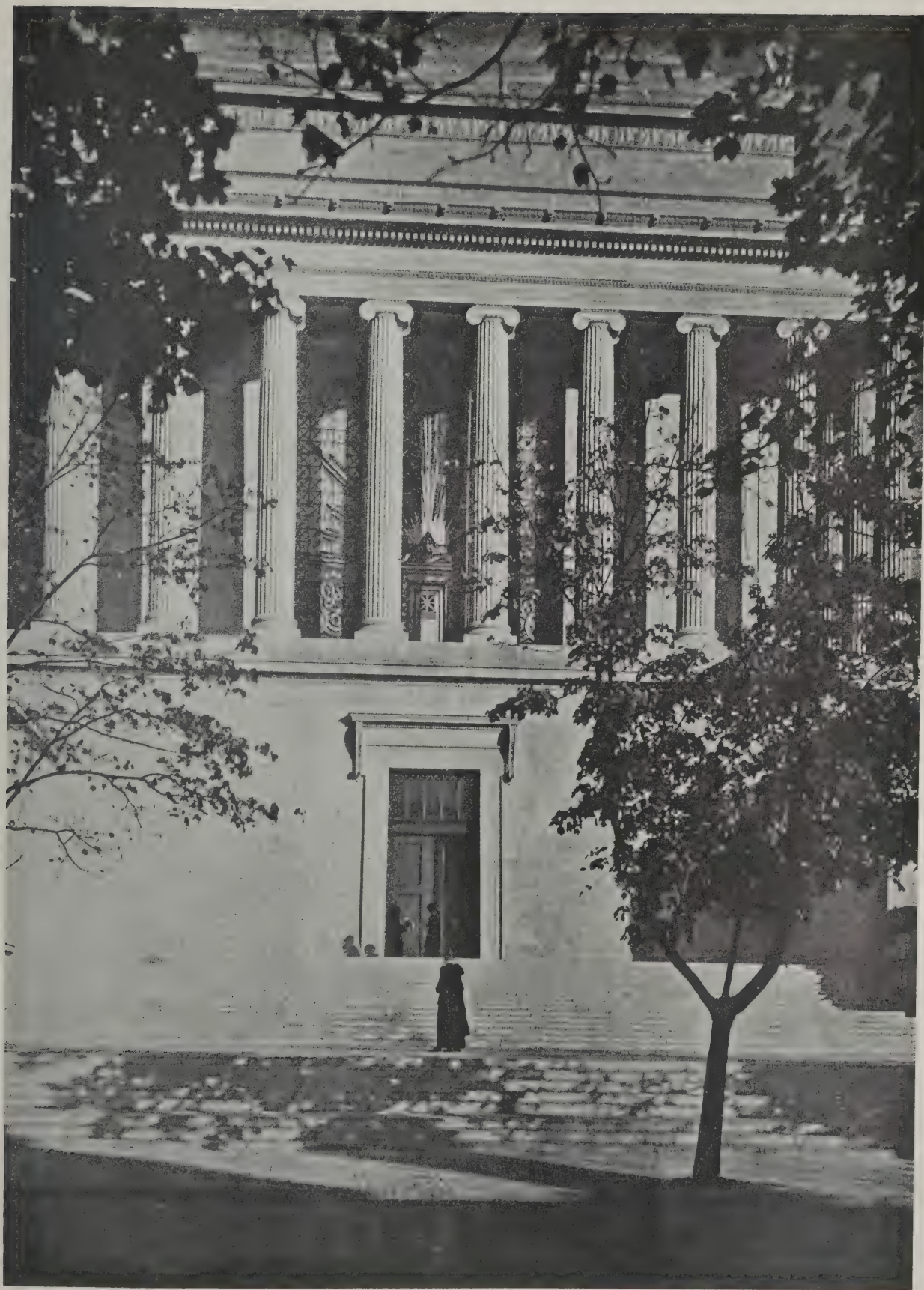
This plate, the fourth of the series of work drawings of the Ritz Hotel which we have reproduced in succeeding weeks, shows the west side of the lounge. The work is carried out entirely in *stuc pierre*, with gilt bronze enrichments. Messrs. Mewès and Dr. were the architects.

A Soldier's Monument.

In our issue for February 9 we published some photographs of a wall monument and tablet to Lieutenant Harford in Mossley Hill Parish Church, Liverpool. These photographs were taken by Mr. Stewart Boyd of Liverpool.



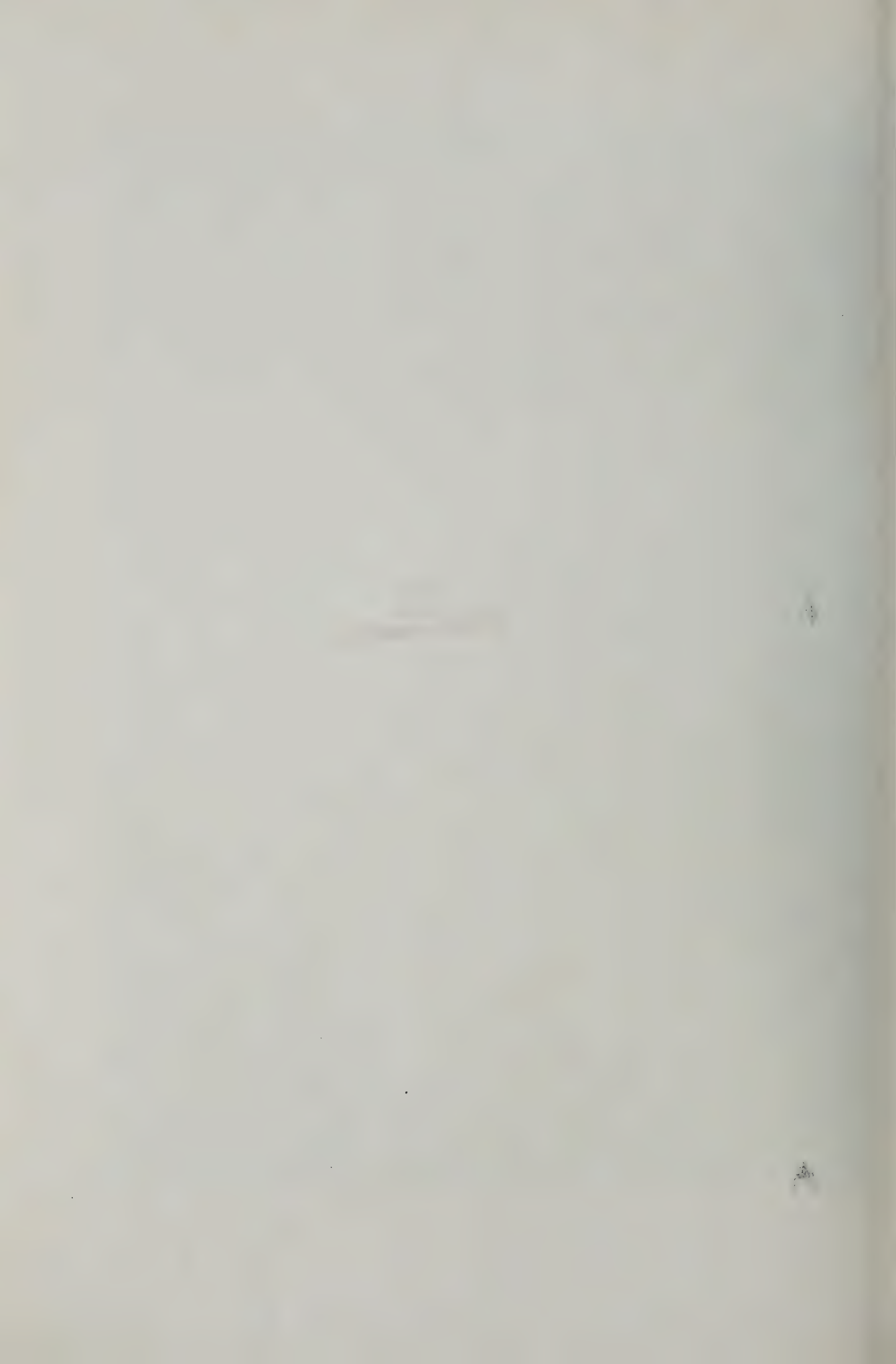
MODERN AMERICAN ARCHITECTURE. XXXVI.—TEMPLE OF THE SCOTTISH RITE, WASHINGTON.
JOHN RUSSELL POPE, ARCHITECT.



MODERN AMERICAN ARCHITECTURE. XXXVII.—TEMPLE OF THE SCOTTISH RITE, WASHINGTON: THE WEST FRONT.
JOHN RUSSELL POPE, ARCHITECT.

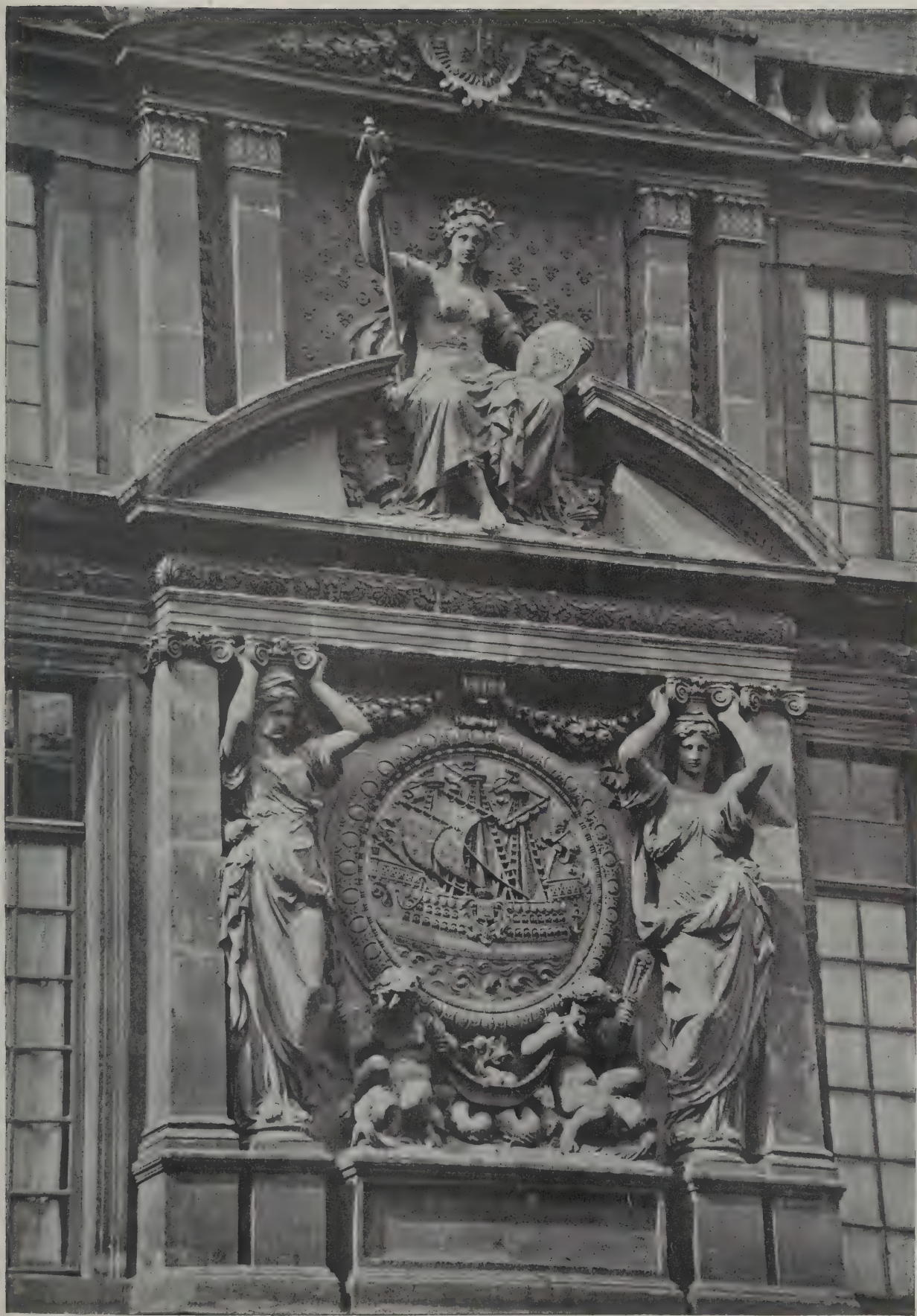


MODERN AMERICAN ARCHITECTURE. XXXVIII.—TEMPLE OF THE SCOTTISH RITE, WASHINGTON: THE ATRIUM.
JOHN RUSSELL POPE, ARCHITECT.





MODERN AMERICAN ARCHITECTURE. XXXIX.—TEMPLE OF THE SCOTTISH RITE, WASHINGTON: THE TEMPLE ROOM.
JOHN RUSSELL POPE, ARCHITECT.



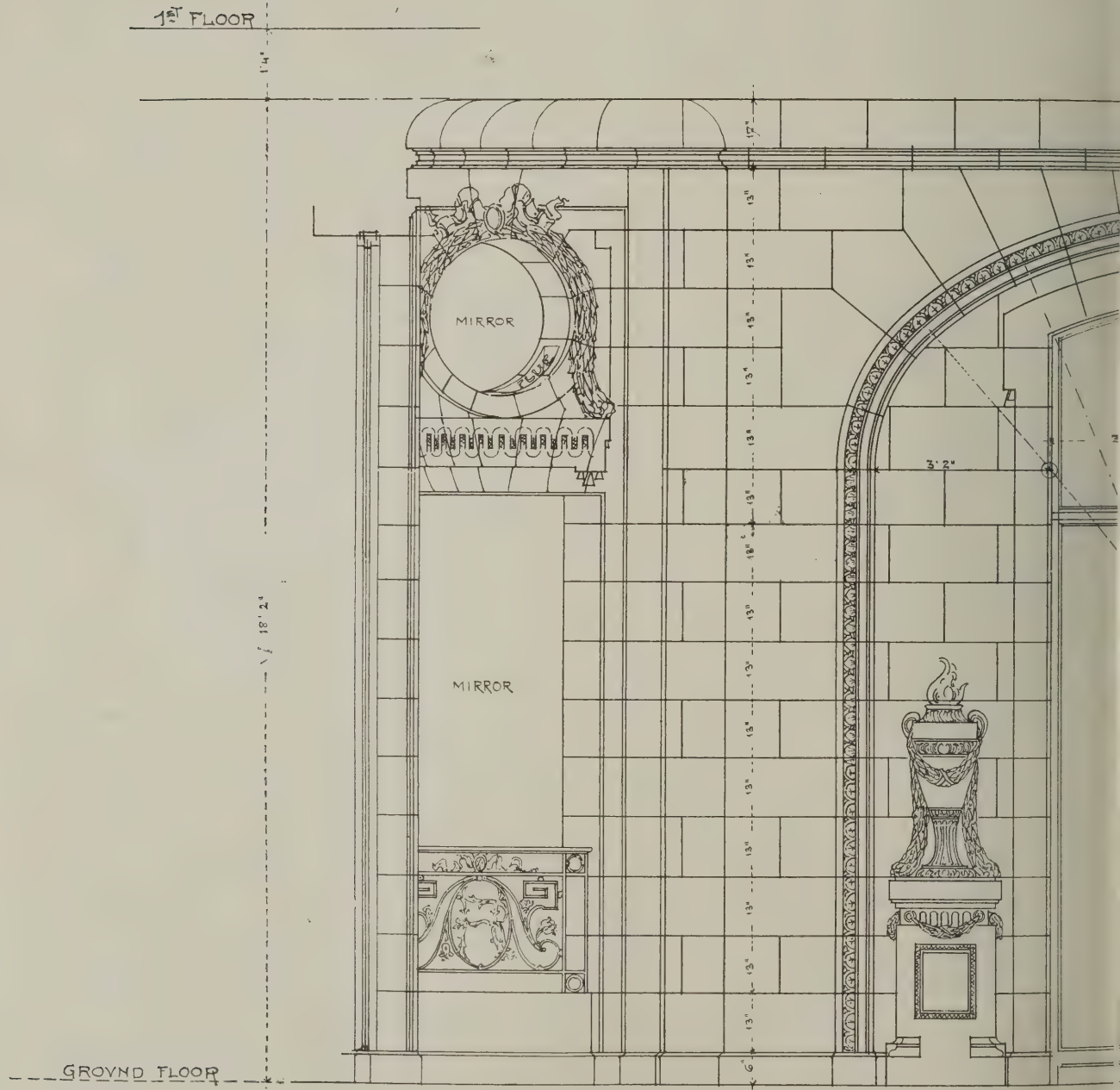
DETAILS OF CRAFTSMANSHIP (SERIES II.). II.—SCULPTURE IN GARDEN COURT OF HÔTEL CARNAVALET, PARIS.



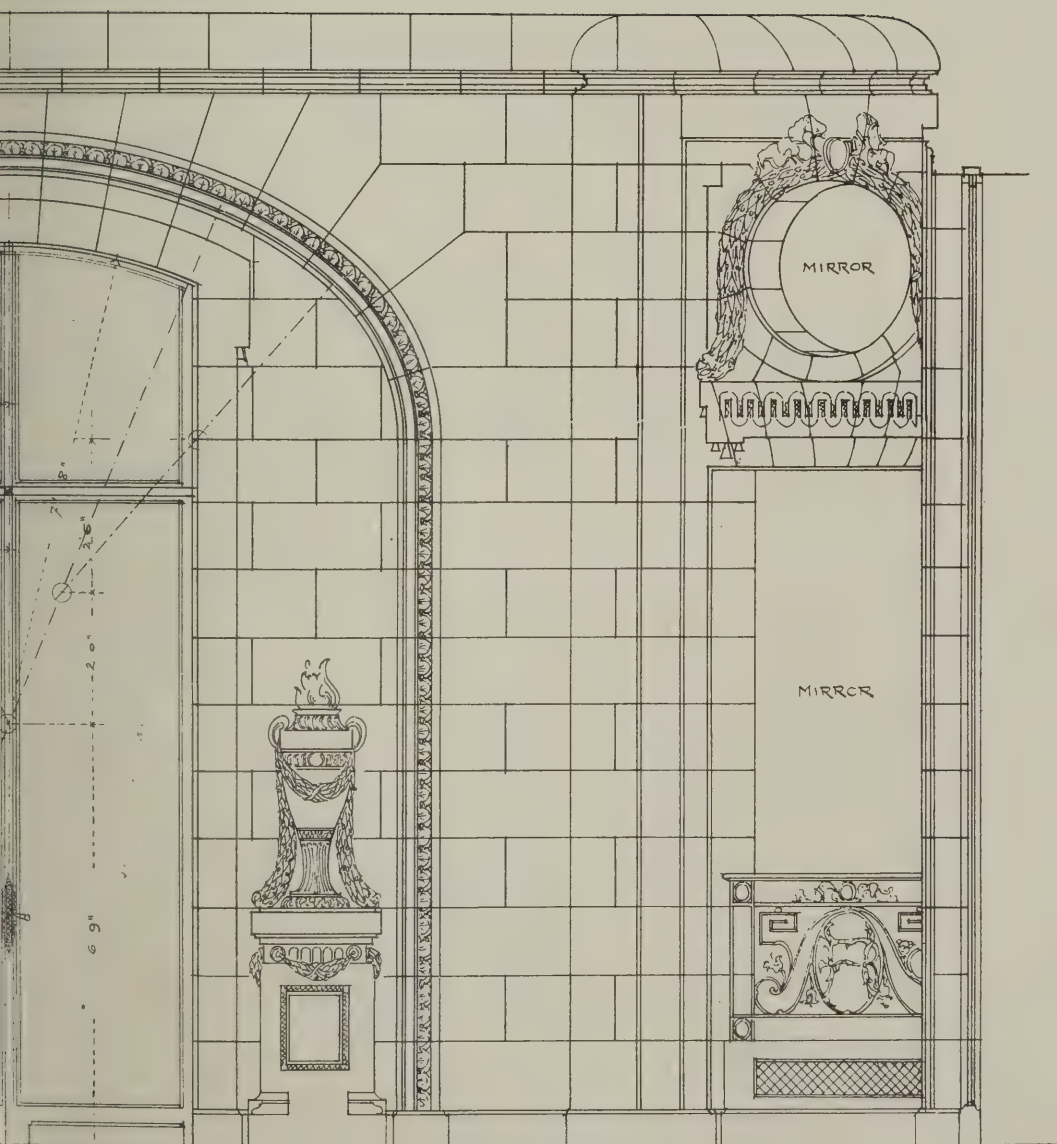
SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.). XXV.—HOUSE ON HOLYWELL HILL, ST. ALBANS.

THE RITZ HOTEL

WEST SIDE OF LOYNGE



DRAWING - № 132



VATION

EL, LONDON: WEST SIDE OF LOUNGE.

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THE UNITY OF GREEK ART.

PROFESSOR HARROWER, of Aberdeen, lecturing in the Northern Art Club, before the members of the Aberdeen Architectural Association, on "The Unity of Greek Art," said (as reported in the "Aberdeen Free Press") that to illustrate all the unifying principles of the art of the Greeks from some one manifestation of their artistic genius sculpture would naturally be selected before architecture. At the same time some of these common characteristics were beyond doubt presented more vividly by architecture than by any other art, the clarity and lucidity, for example, the simplicity, the balance and proportion, the symmetry and harmony, the restraint and reticence, the subtlety, the strong conservatism, the organic growth, the discouragement of egotism and chaotic individualism—above all, the appeal to sense and intellect rather than to the emotional and the feeling of the mysterious which they recognised in all forms of Greek art of which they had knowledge direct or indirect. These architectural qualities could be discovered in Greek literature to a remarkable degree, for though Greek poetry and oratory were essentially plastic it was equally true that the fundamental principles of Sophoclean tragedy took concrete and bodily form in the structure of the Parthenon.

The ancient Greeks were no believers in the doctrine of art for art's sake, nor, on the other hand, did they think that the subject was everything; but, given beauty in the result, the nobler the subject the higher was the work of art. The ethical note was dominant in their sculpture and literature and painting as far as they had knowledge of it. To many, Homer, the Bible of the Greeks, appeared a storehouse of the most exalted morality, and profitable for correction and reproof and instruction in righteousness. At all events, it supplied the teaching of the men who drenched Thermopylæ with their blood and made Britons still at this late day thrill to the name of Marathon.

Another unifying principle was that of religion. If they had to depend on Plato as evidence for the belief that from architecture there might proceed a moral emanation, they had a cloud of witnesses for the influence of religion in Greek art in general. It was different with the Romans, whose greatest triumphs, their basilicas, their baths, their amphitheatres, their porticos, and arrogant aqueducts were secular and not sacred. But with the Greeks the temple was the true centre of all art. It held the statue of the god, its metopes, friezes, and pediments were decorated with sculpture, the precinct within which it stood, as on the Athenian Acropolis, at Delphi, and at Olympia was filled with statuary. The Propylæa or entrance gate to the Parthenon had for one of its wings the Pinacotheca, designed for the reception of painting. The Parthenon itself, and the treasure-houses at other sacred centres, were the receptacle of artistic gifts innumerable. It was worth while digressing to note that the temple was not intended to accommodate a congregation, though those who troubled themselves about the mode of lighting Greek temples seemed obsessed with the idea that the Greeks needed light to find the place in their hymn-books. In the light of that blazing sun, thin laminæ of marble in the roof would have given light enough, as we knew from their use in the apse of San Miniato at Florence.

Architectural sculpture, portrait statues of athletes, the architecture of the theatre, painting to a large extent, music and dancing, the latter of which had not necessarily its modern frivolous associations, but was mimetic of character and emotion, were all bound together in the common service of religion. The subjects of vase-painting were largely drawn from Greek mythology, and the religious impress on dramatic and lyric poetry was unmistakable. No doubt a parallel

might be found to this omnipresent religious character of Greek art in the history of mediævalism; but there was this difference, that whereas mediæval art was the servant of an organisation within the state engaged in the endless struggle to bring the people under the influence of religion, Greek art served a Church that was identical with the whole population, who were in no sense antagonistic to religion, who needed no conversion, whose interest was bound up in the favour of their deities. With the Greek, therefore, religion had a unifying influence in art of a totally different kind and degree. They were faced with the paradox that the Greeks, who, it had been said, had no sense of sin and no sense of duty, possessed an art that was permeated throughout with religion and morality. Until it yielded to the solvent of the Sophists' scepticism, the union of the Greek religion with art was unbroken. To its dependence on religion it was due that Greek art was idealistic, not realistic; for the representations of deity had to have all that was imperfect or familiar abstracted from them and made more sublime and more beautiful than man.

But at the same time the idealism of Greek art was not divorced from nature—it sought to represent nature's types more truly and more beautifully than nature herself had done. It was saved, therefore, from the so-called Idealism, as well as from that degraded form of Realism that aims at illusion. High generalisation, dominated by the sense of beauty, characterised Greek sculpture, Greek drama, and Greek painting so far as we know it. Again, Greek art exhibited simplicity, definiteness and directness as opposed to complexity, mysticism, and what the Greeks called *poecilia*. It was an appeal, as Matthew Arnold said, to the sense and the intellect rather than to the emotion. The man who expected the same effect from the Parthenon as from Rheims Cathedral was doomed to disappointment. This feature of simplicity and directness was one that especially marked the architecture of the Greeks, but was manifest also in their sculpture and literature, and probably also in their music. Their love of balance, proportion, symmetry, and harmony, and also their subtlety, were manifested above all in their architecture, but it dominated sculpture as well to an extent that it was difficult for moderns to understand. That the Greek artist should have subjected himself with meticulous obedience to the duty of so presenting subtle relations of the parts of the human figure and of introducing the no less subtle curves of the Parthenon, implied a public of marvellous responsiveness and sensibility. Vase painting, and poetry, dramatic and lyric, submitted themselves to equally exacting conditions. The structure of the Ode was a miracle of balance, little understood till recent days. The restraint and reserve, again, of Greek art, though presenting such puzzling exceptions as the use of colour in architecture and sculpture, was proverbial. It was above all manifest in the form and movement, the expression and the drapery of Greek sculpture. The best way to understand this was to place the Attic grave stelæ, with their beautiful calm and reticence in grief, side by side with the monstrous horrors of the Campo Santo in Genoa. No more perfect example of Greek restraint in architectural ornament could be found than in the north door of the Erechtheum, which one could gaze on for hours with exquisite enjoyment.

Lastly, to the conservatism which, whether prescribed by religion or a powerful public sentiment, was an influence in all Greek art, they might refer in a large measure the supreme excellence of the Greeks. It was astonishing to mark in every department of art how restricted was the field in which they worked. There were but three styles in Greek architecture; the two of the figure in Greek sculpture were comparatively few; Greek drama was severely circumscribed in the source and character of its plots and by other restraining conditions; the groups and schemes of Greek vase painting could be easily classified.

MR. MAWSON ON THE ATHENS TOWN PLANNING SCHEME.

There was a large attendance at a lecture given in the Blackburn Town Hall last week by Mr. T. H. Mawson, Hon. A.R.I.B.A., on "The World's Most Famous City—Athens: Past, Present, and Future," and it was given by permission of Mr. Mawson's clients, the King and Queen of Greece, he being commissioned to plan the Palace gardens at Athens, and being also associated in the big scheme for the development of the city. The proceeds of the lecture were in aid of the Prisoners of War Help Committee.

Mr. Mawson said that any failure, whether through lack of foresight or want of reverence for the archaeological treasures handed down from past ages, would bring upon the planner the hearty condemnation of every lover of Athens. This city of all cities in the world calls for reverent handling. From it all classic learning sprang, and every scholar the world over rightly considered he had a vested interest in it which he must guard with the utmost jealousy. Greek art belonged to the school of Nature, and the city of Edinburgh most nearly attained to the Greek ideal among British cities. He sometimes wished they could borrow more Scotsmen to help them realise some of their own opportunities in their Lancashire towns. Scotsmen had learned in respect to their capital how to blend Art and Nature so that they passed from one to the other by imperceptible degrees. In considering the planning of a city one must first grasp the psychology of the people in all its bearings, for whatever was done in the way of improvement must express and emphasise the national qualities and ideals. They must be studied with the climatic influences, sociological and industrial conditions. One of the most important and interesting problems with which they had to deal was that of the large number of workshops, especially those occupied by the marble workers. These at present were scattered over the city, but under the new scheme the whole of the factories were to be located by the side of the railways, each having its slip line. The same thing applied to warehouses, wholesale markets, etc. The whole of the factories would receive their power from one power-station, so that there would be no multiplication of smoking chimneys. There was to be a comprehensive scheme of afforestation on the outskirts of the town, extending over vast areas. Many thousands of acres would be planted, thus adding to the coolness and beauty of the city. There were to be a large number of open spaces, where, in addition to shady trees, there would be grass, flowers, fountains, and noble statuary.

If Athens were as rich as one of their Lancashire towns, he should utterly despair of her accomplishing anything, but because they were so poor, and had necessarily to practise the most rigid economy, they would accomplish all he had suggested and more. Did they realise that they had in any large Lancashire town more superficial yards of extensive ornament than they had in Athens? only the ornament of the latter was enduring and meant something, whereas with them in England the most charitable thing to say about it was that it generally meant nothing. The real reason why Athens would succeed whilst they in England failed was that the former would first solve their problems on paper and then, if necessary, take fifty, a hundred, or two hundred years to accomplish their object. In England they pre-

varicated, and steadfastly refused to look beyond the next municipal election. He felt, however, that in England they were approaching a better condition of mind. The soldiers would come back after visiting France, Belgium, and other countries with a healthy discontent, and would not put up with excuses as to the cost. They would demand as their right a fuller life amongst more beautiful surroundings. The first essential was for the classes and the masses to draw together and recognise that both were essential for the making of the perfect city.

Mr. Mawson commented on the great distances workmen in England had to travel to their work, which was comparatively near if such roundabout ways had not been fashioned. The Greek liked to travel straight to his objective. A plan was shown illustrating a plot of land to be laid out with workmen's dwellings in the form of maisonnettes, or self-contained flats, built round a court paved with stone. In the centre was a washhouse common to the whole, and a power-producing plant. There were a pantry, scullery, three bedrooms, and a bathroom, and a verandah round. Other workmen's houses had two bedrooms. Vacuum cleaners were supplied and electric light, gas cookers, etc. Everything possible was done to save labour.

BOOK NOTICES.

The Circular-Arc Bow-Girder.

Girders that form a circular arc in plan—as, for instance, for the support of the balcony of a theatre—offer a rather peculiar problem in stresses, which are complicated by twisting moments affecting very considerably the state of equilibrium of the girder. Professor Gibson, in a paper read before the Royal Society of Edinburgh in 1912, solved the general problem, and the authors of the treatise under notice have, in the first portion of their book, based their study upon the principles he laid down. In the second part, much of the matter relates to experiments with a number of commercial sections to ascertain the values of their torsional rigidity. Numerous and very clear diagrams illustrate the workings, and the book may be certainly classed among the select few that add to knowledge.

"A Study of the Circular-Arc Bow Girder." By A. H. Gibson, D.Sc., Assoc. Mem. Inst. C.E., M.I. Mech. E., Professor of Engineering in the University of St. Andrews. University College, Dundee, and E. G. Ritchie, B.Sc., Assistant Lecturer in Engineering, University College, Dundee. Price 10s. 6d. net. London: Constable & Co., Ltd., 10, Orange Street, Leicester Square, W.C.

Lockwood's Price Book.

For the first time in forty years, this Price Book appears under a new editor, Mr. R. Stephen Ayling, F.R.I.B.A., having succeeded to the chair so long occupied with ability by Mr. Francis T. W. Miller, who died in January last. In commendation of this book nothing more need be said than that, in the hands of the new editor, it maintains the high standard of usefulness to which his predecessor had brought it. Mr. A. J. David, K.C., brings up to date his valuable annotations of the several Building Acts, and Mr. A. P. Haslam, M.I.E.E., has again revised, and has amplified, the extensive section dealing with electric lighting.

"Lockwood's Builders', Architects', Contractors', and Engineers' Price Book for 1916." Edited by R. Stephen Ayling, F.R.I.B.A., M.R.San.I., etc. With a Supplement containing the London Building Acts, and other Enactments. Price 4s. London: Crosby Lockwood & Son, 7, Stationers' Hall Court, Ludgate Hill, and 5, Broadway, Westminster.

ENQUIRIES ANSWERED.

Dimensions for Chimney Stalks.

M. M. (Motherwell) writes: "I should like to have particulars for the chimney stalks, one 140 ft., the other 100 ft. in height. I intend to build the square. What is the size of the concrete base required? The soil is good fire-boulder clay. What should be the thickness of walls at foundation and how thick need the fire-brick lining be carried? I want the inside of the chimney to be equivalent to 5 ft. 6 in. diam. in each case."

—The 100 ft. chimney stalk would need to be not less than 11 ft. 3 in. square at the base and three bricks thick, diminishing a half-brick in thickness for every 20 ft. of height. The top length should be one-brick thick and 5 ft. square inside the fire-brick lining 30 ft. high, $4\frac{1}{2}$ in. thick, 5 ft. square inside, not bonded to the outer wall but with a sailing course for it projecting over the cavity 3 in. clear from the top to allow for lengthening due to heat. There may be six courses of footings, and the concrete base might be about 22 ft. 6 in. square and 5 ft. deep. The 140 ft. chimney stalk would require to be 14 ft. square at the base and four and half bricks thick, diminishing a half brick in thickness for every 20 ft. height: the top length one and a half bricks thick and 5 ft. square inside: fire-brick lining 40 ft. high, $4\frac{1}{2}$ in. thick, and 5 ft. square inside: ten courses of footings and concrete 28 ft. square by 6 ft. deep.

HENRY ADAMS.

Deductions from Contract Sums.

Danlyrs (Lichfield) writes: "A contractor is carrying out additions to a public building in the North, having signed the usual R.I.B.A. conditions with the quantities forming part of the contract. The quantities are 'approximate only,' as the whole job will be measured and priced according to prices in them, which, of course, makes the quantities a schedule. In the preliminary bill of about fifty items a clause reads: 'Wherever the word "allow" occurs the extent and cost of the item is at the risk of the contractor.' Now, because the total account is less than the contract sum, the surveyor wants to reduce the amount priced in the contract against these items. Is he entitled to do so? As an illustration: The steelwork in the quantities is valued at £960, but in the measured account it is put at £760. In this trade an item is—allow for removing rust, scale, etc., etc., and painting, etc., priced at £30, which the surveyor wishes to reduce by £5. Can he rightly do so?"

—The main point raised by the querist is rather a novel one, owing to the exceptional provision that wherever the word "allow" occurs the extent and cost of the item is at the risk of the contractor. The contract is said to be one whereof the quantities form part, and without the above provision doubtless the surveyor's view is right; but the effect of the provision in question appears to convert those items to which it applies into lump-sum amounts. In such case it would not be proper to deduct anything from such amounts on the ground of a variation in the amount of work to which they relate unless it could be shown that there had been an authorised omission of a part of the work in respect of which the builder has provided the lump-sum price to which the provision afore-

A. G. W.

LEGAL.

Action Against and Counter-Claim by Builders.*Indented Bar and Concrete Engineering Co., Ltd., v. J. Chessum and Sons.*

February 25 King's Bench Division. Before Mr. Justice Scrutton.

This was an action by the plaintiffs, of Stoke-upon-Trent, to recover from the defendants, the well-known London builders, the balance of account for large quantities of indented steel bars supplied in connection with extensive buildings the defendants were erecting for the Port of London authority at the Royal Albert Docks. The defendants submitted to judgment on the claim, and the only matter before the Court was a counter-claim by Messrs Chessum for alleged delay in delivery.

Mr. Roche, K.C., was opening the case for Messrs. Chessum in some detail when consultation took place and terms were arranged disposing of the matter.

The nature of the settlement was not disclosed.

Building Scheme: Alleged Infringement of Covenant.*Wood v. Jacobs and Others.*

February 17. Court of Appeal. Before the Master of the Rolls and Lords Justices Phillimore and Warrington.

This was an appeal by the defendants from a judgment of Mr. Justice Neville in the Chancery Division.

The action was brought by Mr. S. M. Wood, of East Dulwich, against the Shirt and Collar Dressing Co., of Beckenham, Kent, of which Mr. Appleton and another were proprietors, for an injunction to restrain them and the co-defendant, Mr. F. Jacobs, a builder, from erecting a workshop or any building other than a dwelling-house on a piece of land abutting upon Avenue Road, Beckenham, in alleged breach of their covenants. Plaintiff also asked for a mandatory order that any building which had been erected upon the site should be forthwith pulled down and removed.

It appeared that the Beckenham Park estate was acquired in 1868 by the Second Kirkbeck Building Society, who laid it out in a building scheme in plots, imposing certain conditions and stipulations upon purchasers. One of these stipulations was that no factory should be erected upon the estate except at a distance of 60 ft. from the boundary line. The plaintiff purchased a corner plot at the junction of Avenue and Mackenzie Roads, and the adjoining plot was purchased by Mr. B. Appleton and Mr. L. S. Smith, who traded as the Penge Shirt Manufacturing Co. and so, as the Shirt and Collar Dressing Co., erected a pyjama and shirt factory on the plot. It was erected on a line with the dwelling-houses and not 60 ft. from the boundary line.

Evidence was given to show that the defendants employed a number of women at the factory who worked sewing machines, the power being supplied by electricity from a 3 h.p. motor, and the plaintiff's contention was that this was a factory within the meaning of the stipulations.

For the defence it was submitted that the defendants' premises were not a factory within the meaning of the stipulations and in the sense intended by the vendors, and the defendants' evidence was to the effect that there was no noise to be heard and no vibration noticeable outside the building.

Mr. Justice Neville held that it was clear the building scheme was intended, and that the building in erection was a "factory"

within the meaning of the covenant. He accordingly granted the injunction claimed with costs; but, as the work the defendants were doing was a useful one, his lordship stayed the operation of the injunction until three months after the declaration of peace.

Mr. C. E. Jenkins, K.C., and Mr. Carr appeared in support of the appeal, and Mr. Bramwell Davis, K.C., and Mr. H. Langford Lewis for the respondent (the plaintiff).

At the conclusion of the arguments, their lordships affirmed the decision of Mr. Justice Neville and dismissed the appeal, with costs.

NATIONAL HOUSING AND TOWN PLANNING COUNCIL.

A national congress will be held in April for the purpose of considering "Home Problems After the War." A programme of the proceedings has been issued, and special attention is drawn to the following paragraphs:

"It is not suggested that the State should provide capital for this purpose before the close of the war. The Treasury have rightly taken the view that the whole of the financial resources of the kingdom should be concentrated on war work, and it is clear that no capital should be used for this purpose except in munition areas.

"But the plans should be prepared, the designs should be exhaustively considered, the areas in which the houses are to be built should be properly planned, provisional agreements for the purchase of the land should be entered into, and all the preliminary details completed ready for actual building operations to be commenced without delay when the war closes.

"The capital to pay the cost of construction will not be required until that stage is reached, and therefore no question need arise as to the diversion of capital from the supreme task of winning the war.

"What is needed now is not the expenditure of capital on construction, but the exercise of foresight in preparing plans for the future, and the realisation of the truth that in the interests of national honour we must so mobilise our reserves of national energy, ability, and resource as not only to win the war, but to secure also that as a nation we shall, at the end of the war, be mobilised and ready to conquer the difficulties in regard to trade and employment which always follow great wars and which will inevitably arise when this great war comes to an end."

Definite and clear proposals will be placed before the congress for consideration, and there is good reason to hope that, in at least one of our great trades—the building trade—foresight shall be exercised and measures taken to prepare for the end of the war.

The building trade is a muscular trade, and has provided great numbers of recruits for the new army. Knowing that the home demands for their labour will be great during the war, and wages good, these men have, nevertheless, volunteered for service. The least, therefore, that we can do will be to recognise as a duty—standing only next in importance to that of winning the war—the provision of useful employment for them on their return to civil life.

The congress will be held at the Caxton Hall, Westminster, from Tuesday, April 11, to Friday, April 14. The chairman is Mr. Harold Shawcross, J.P., of Rochdale, and the secretary Mr. Henry R. Aldridge, 41, Russell Square, W.C.

NEWS ITEMS.

School Buildings and Air Raids.

All schools and buildings under the Mid-dlesex Education Committee have been insured against air-craft damage, not exceeding £3,000 for any one building. £400 is the premium payable, and the policy does not cover damage to playgrounds.

Business Amalgamation.

Mr. Colbourne Little, F.R.I.B.A., 18, Bank Buildings, Queen's Road Central, Hong Kong, informs us that he has amalgamated his business with that of Messrs. Thomas, Adams, and Wood, of Canton, under the style or firm of Little, Adams, and Wood, with offices in Hong Kong and Canton.

Change of Address.

The business of Sir Arthur Blomfield and Sons, hitherto carried on by Captain Charles J. Blomfield and Mr. Arthur C. Blomfield, at 6, Montagu Place, Baker Street, W., has been transferred as from March 1 to the Eyre Estate Office, 125, Park Road, N.W. Captain Blomfield can also be communicated with at the headquarters of the Artists' Rifles, Duke's Road, Euston Road, W.C. (Telephone: Central 10814); and Mr. Arthur Blomfield, as before, at the Architect's Office, Bank of England, E.C.

Cambuslang Town Planning Scheme.

The Local Government Board for Scotland have appointed their Engineering Inspector, Mr. David Ronald, a Commissioner to hold a local inquiry in connection with the application to the Board by the Local Authority of the Middle Ward District of the County of Lanark for authority to prepare a town planning scheme for the Cambuslang area. The inquiry will be held within the Merchants' Hall, 30, George Square, Glasgow, on Monday, March 20, 1916, at 10.30 o'clock forenoon. The area proposed to be included in the above scheme embraces those parts of Cambuslang lying to the West of Buchanan Drive, to the south of Brown-side Road, and to the east of Greenlees Road, including Kirkhill, East Greenlees, West Greenlees, Whitlawburn, Fishercoats, Wellshot, and Silverbank. Particulars can be obtained from Mr. W. E. Whyte, Clerk to the Local Authority Hamilton, Scotland.

Garden Cities and Town Planning Association.

The question of the settlement of discharged sailors and soldiers upon the land, which is recommended by the recent Departmental Committee's Report, will be dealt with at the annual meeting of the Garden Cities and Town Planning Association, which will be held at the Mansion House on Wednesday afternoon, March 22. The Lord Mayor will preside, and among those taking part will be the Marquis of Salisbury the president of the Association, and the Earl of Selborne the President of the Board of Agriculture, who will deal with the proposals in the report. It is also hoped that a prominent sailor and soldier will speak from the point of view of the Services. The formation of garden villages, with the idea of a more general distribution of the population upon the soil, has been one of the chief aims of the association since its foundation, and at the outbreak of war a special committee was at work with the idea of establishing a small-holdings colony. The Association has offered its assistance to the Board of Agriculture in regard to the proposals, and the experience which has been gained in the development of the estates which have been developed will doubtless be of assistance.

R.I.B.A. ANNUAL ELECTIONS: IMPORTANT ANNOUNCEMENT.

The "R.I.B.A. Journal" of March 4 contains the following announcement:

"A special general meeting will be held on Monday, March 13, 1916, at 4.30 p.m., to consider a proposal which will be submitted by the council in order to avoid holding an election for the council and standing committees in 1916 during the absence of several hundreds of members serving with the Forces.

"The following resolution will be moved on behalf of the council: 'That in accordance with the provisions of Clause 33 of the Charter application be made to the Privy Council to sanction the suspension of the by-laws governing the annual election of the council, the standing committees, and the hon. auditors, so that the council, the standing committees, and the hon. auditors elected in June, 1915, shall remain in office until June 30, 1917.'"

As the by-laws require an attendance of at least forty Fellows at this meeting and the notice is necessarily short, the urgency of this announcement is obvious.

COMPANY MEETINGS.

HUMPHREYS, LTD.: ANNUAL GENERAL MEETING.

The twenty-fourth annual general meeting was held on Tuesday, February 29, at the offices of the company, Knightsbridge, S.W., Colonel James Charlton Humphreys, the chairman, presiding.

The Secretary (Mr. A. J. McMillan) having read the notice convening the meeting and the auditors' report,

The Chairman said: I trust the result of the year's trading, as shown by the balance-sheet and statement of accounts, meets with your approval. In moving the adoption of the report and balance-sheet for the year ended November 30 last, I have to say that this year has been one of unceasing activity. Notwithstanding the many difficulties we have had to contend with, such as a depleted staff, labour troubles, almost insurmountable difficulties of transport, we have been able to carry out satisfactorily all our contracts.

The turnover for the past year has been the biggest in the life of the company, and at least nine-tenths of that turnover represents contracts entrusted to us by the Government for work in connection with both the Services and other work connected with the war. While the turnover has been exceptionally heavy, the percentage of profit has been exceedingly low. As regards the net profit for the year, you must please bear in mind that this has only been attained by a small percentage of profit on a very greatly increased turnover obtained by keen competition. This fact, we think, should be satisfactory to the shareholders. It cannot be said that the company has made abnormal profits on account of the war, but it has worked very hard to supply the Government requirements at a very moderate rate of profit.

A larger distribution of profits could have been made, but we are placed in this position, that, under the Finance Act No. 2, the Government are entitled to 50 per cent. of our profits in excess of the average. This entails upon us a very large payment to the Government both in respect of the year ended November 30, 1914, and of the year now under review. To meet the

Government's requirements, we considered it imperative that a special reserve fund should be created of £20,000, as shown in the balance-sheet. You will notice that our reserve and other investments have considerably increased. This is owing to the conversion of our Consols into Four-and-a-Half per Cent. War Loan, which involved a purchase of that stock of about £20,000, bringing the total sum invested in all funds to £37,997 8s. 1d. (market value £34,915), as shown by the balance-sheet, which is in excess of our reserve fund after writing off £4,717 14s. 7d., representing the depreciation of our Consols at the time of conversion into War Loan.

Taking everything into consideration, I regard the present balance-sheet as quite satisfactory. As regards the future, it is very difficult to predict what will happen after the war, but so long as the war continues, we have every reason to believe that we shall be fully employed, as is the case at present, in carrying out the requirements of the Government, and our activities are not confined to this country alone. It must be borne in mind that prices of all materials have increased enormously and that business from our usual private and industrial clients can hardly be expected on the same scale as hitherto when prices are so high, and it has been found necessary to withdraw all our catalogue prices. I, however, take quite a hopeful view of the future, but it must be carefully borne in mind by the shareholders of this company that the making of profits greatly depends on securing a large turnover at a small rate of profit, and that the Government require a share of those profits to be paid over to it. Therefore, while the shareholders are getting their usual dividend, the profits more or less in excess of this amount are being provided by them towards paying the cost of the war. In that sense, you will agree with me that we are doing very practical work for the State, which should bring its reward in due time—perhaps in the near future.

I beg to declare that the reports and accounts, together with a dividend of 7 per cent. per annum on the Preference shares and 10 per cent. per annum on the Ordinary shares be paid and £20,000 placed to special reserve, and that £10,627, undivided profit, be carried forward to next year's account. This was seconded by Mr. Retallick, and carried unanimously.

Mr. Alfred Back, J.P., the retiring director, was re-elected, and also the auditors, Messrs. Turquand, Youngs and Co.

A vote of thanks to the chairman, directors, and the staff terminated the proceedings.

PRUDENTIAL ASSURANCE COMPANY.

The ordinary general meeting of the Prudential Assurance Company, Ltd., was held on Thursday, March 2, at Holborn Bars, Mr. Thomas C. Dewey (the chairman) presiding. From his address the following particulars are extracted:

The figures shown in the first page of the report, he said, would have been amazing if the year 1915 had been a year of peace, but when we consider the number of unusual calls upon us all, together with increased taxation and greatly increased cost of living, the figures I am about to quote will show what astonishing results our company has produced. The total assets as shown by the balance-sheet are £94,794,798, being an increase of £3,592,454 over last year. The total in-

come of the company during the past year was £17,831,590, an increase of £635,500 over that of the previous year, and £1,263,981 over that for 1913. Of the amount £3,677,559 came from interest and dividends and £13,672,644 from premiums. The interest and dividends were £107,600 in excess of those for 1914. It is, however, to the increase in the premiums received in the industrial branch I would draw your attention. In 1914 the premiums received amounted to £8,176,202, an increase of £301,746. In 1915 the premiums received amounted to no less than £8,506,000, which is an increase of £329,861. It is to say, in spite of the country being engaged in hostilities for the whole of twelve months, we have again secured record premium increase. The number of industrial policies in force has been increased during the past year by 774,877, 20,859,887, assuring £276,402,265, exclusive of bonus; the average duration of the policies exceeds thirteen years. The premiums that are receivable in respect of these policies amount to £171,755 per week or £9,862 more than in the previous year. This is an increase in the weekly premiums that has never been approached in the history of the company. In the ordinary branch the number of policies issued was 68,785, assuring £6,619,218, and producing a new annual premium income of £457,217. This is an increase of 3,034 the number of policies, £300,375 in sums assured, and £32,864 in new premiums, over the new business for 1914. Our business in policies for £500 and upwards still continues to increase, and during last year exceeded £1,100,000 in assurances. The premiums received in the ordinary branch during the year were £5,157,516, being an increase of £121,000 over the year 1914. The total sum assured under the 935,514 policies in force at the end of the year was £104,336,208.

From the commencement of the year the directors, being anxious to encourage those members of the indoor and outdoor staffs who desired to enlist, have paid the difference between their official salaries and their service pay, in order that they might not suffer financially by reason of their patriotic response to the country call.

£600,000 has been added to the reserve fund in the ordinary branch, bringing it to a total of £1,600,000, and £342,365 to the reserve fund in the industrial branch, which, after deducting £92,365 for real losses on conversion of Consols, brings the investment reserve fund to £1,000,000. In addition £700,000 is carried to a special contingency fund in the ordinary branch which will be available to meet any emergency which may possibly arise. The reserve funds and amounts carried over both branches, which are available to meet the special conditions imposed by the Government, amount to a total of over £4,100,000.

Apart from our normal excess of income over outgo and in addition to our large cash balance at the bank, we hold at present over £10,000,000 of securities maturing this year, of which £9,000,000 are British Government Treasury Bills.

The company's application for £3,000,000 War Loan represents what is probably the largest subscription from any company (excluding banking companies) throughout the kingdom. The conversion of holdings of Consols and 3½ per cent. War Loan brought their total holding of New War Loan to over £5,000,000. The company increased their holding of British Government securities by £12,000,000.

A vote of thanks to the chairman and directors was passed unanimously.

THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, March 15, 1916.

Volume XLIII. No. 1106.



THE BUDDLE, LYME REGIS.

(From a pencil drawing by Harold Falkner.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

MARCH 15, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1106.

EDITORIAL.

SINCE it has been made clear that the work of strengthening the Charing Cross railway bridge is not to be undertaken until after the war, the joint plea of Mr. Ernest Newton (who, by the way, has just been elected a member of the Athenæum Club), as President of the R.I.B.A., and Sir Aston Webb, as Chairman of the Council of the London Society, that the proposal should likewise be postponed until it can be fully and carefully considered, is entirely reasonable, and can be supported without reservation. For more than fifty years Hawkshaw's lattices have blasphemed against the amenities of the Thames. In 1863, when the utilitarian conception of commerce and traffic filled the public mind to the exclusion of all refinement; when the river was regarded as little better than a sewer, and was therefore shut out of sight by the "mean hovels and black coal wharves" huddled upon its banks; and when the idea of an Embankment was regarded as a visionary project, this ugly bridge conformed to the spirit of the times. It is now demonstrably an anachronism which should not be perpetuated.

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Churches in cities have comparatively short lives. It is not only that they suffer physically, whether from the impurities of the atmosphere, or from the multiplied risks of fire, but that their moral claim to occupy covetable sites is subject to frequent revision. In the City of London, many of Wren's churches have been demolished upon the showing that their districts had ceased to be residential, and had become almost entirely commercial, with the inevitable consequence that warehouses were wanted and churches were not. For comparable though not precisely identical reasons, Liverpool is about to lose its oldest church, that of St. Peter, which, it would seem, has been superseded, as the parish church of Liverpool, by that portion of the new cathedral which has been recently opened.

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Although St. Peter's dates no farther back than the year 1700, when the foundation-stone was laid, the name of its architect cannot be discovered; which, it has been cynically said, is fortunate for his reputation. Attempts to foist it upon Wren are not supported by internal evidence. There is a legend to the effect that a London architect who was asked to supply a design for the doorways sent four sketches, and that the building committee, disagreeing as to which should be selected, compromised by adopting all four. How otherwise would it be possible to account for the diversity of the four entrances to the church—except, indeed, by assuming that there were not only four designs, but four architects? That the unknown architect was at all

events a Londoner, is surmised from the general resemblance of St. Peter's to the church of St. Andrew, Holborn, and from the probability that a small township such as Liverpool then was—it had a population of about five thousand—would go to London for an architect for its parish church. That the building is "plain" may be admitted without conceding that, as some have contended, it is positively ugly. Someone has advanced the comforting assurance that "we are all fair in the eyes of those that love us," and St. Peter's comes well within the provisions of that saving clause. Successive generations of citizens have had an affectionate regard for its old familiar features, which seem to them an integral part of the city of whose growth it was, in a way, the nucleus. They are naturally very reluctant to lose it, and are already protesting vigorously against the proposed demolition. Among the many thousands of names bestowed at its font are those of William Ewart Gladstone, and this fact should suffice to secure the jealous preservation of the font, if not of the church.

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Pediments and a portico give an air of classicalism to the house in Rodney Street—which, from the number of doctors in it may be regarded as the Harley Street of Liverpool—in which Gladstone was born, and on it there is, of course, a memorial tablet. Architecturally, the street has considerable dignity and it leads up to the new cathedral, which is being built on or near the site of a quarry that, in 1829, the corporation acquired and made into a cemetery; to which an entrance was tunneled through the solid rock. Huskisson's monument, in the form of a small Greek temple, adorns the cemetery, which is in some parts 50 ft. below the street level. Looking through the glass-panelled door of the monument, one sees John Gibson's rather fine statue of Huskisson, who, it will be remembered, was killed by the "Rocket" locomotive while he was in conversation with the Duke of Wellington on the opening of the Liverpool and Manchester Railway, on September 15, 1830. He was the ablest financier of his time. A mortuary chapel that very correctly Grecian gives a serene grace to the cemetery of exceptional character and interest.

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St. Andrew's Holborn, upon which St. Peter's Liverpool, is supposed to have been modelled, was built by Wren in 1686, and was formerly much more generally admired than it is to-day. It occupies the site of a church of which the date is not ascertainable, but there is a record that it was given to the Dean and Chapter of St. Paul's in 1297. It was destroyed in the Great Fire, but, having fallen into hopeless decay, was scheduled in the scheme

building entrusted to Wren, who apparently incorporated the old Gothic tower, recasing it and adorning the four corners with his favourite pineapples. Gothic windows in the west end emphasise the hybrid character of a building whose interior also is curious rather than commendable. A wagon-headed ceiling of large span covers the nave, while the ceiling of the aisles are groined. A Palladian window, in two storeys, above the altar, is filled with coloured glass that is more brilliant than beautiful, and the spandrels of the arches between nave and aisles are overloaded with carved festoons of flowers and fruit.

* * * * *

Sheffield is revising its building by-laws. A special committee was appointed to prepare a report on the subject, and, very prudently, this committee has given careful consideration to representations that have been formally made by the Sheffield Society of Architects and Surveyors and by the District Master Builders' Association, as well as to the information supplied by corporation officials. Whether there has been any clash of interests and opinions is not apparent. Probably there have been no serious differences to reconcile; for one great advantage of formally stating a case is that the process tends to evaporation of the cruder and baser elements of self-interest; and it is therefore quite possible that, in the present case, the various points of view respectively held by architects, builders, and officials have all been found to converge towards the focussing point of public utility. All the reforms suggested at Sheffield are put forward in a plea of war-time economy, and the proposal that the revision shall take effect for the period of the war and for two years afterwards raises a faint suspicion of an undesirable lowering of the standards. And yet, with one exception—a slight reduction in the height of rooms—the suggested alterations need no plea of war-time exigencies. To abolish cellars, and substitute pantries and coal-houses on or near the ground-floor level, is perhaps more expedient than desirable; but to permit the use of reinforced-concrete walls, and the substitution of asbestos tiles for natural slates, involves no daring innovation of experiment. It is believed that revision of the Sheffield by-laws on these lines will encourage the building of cottage property. If it has this effect, the example will no doubt be extensively followed, and danger may arise from attempts to carry the cheapening movement beyond the safe limits that the Sheffield Society of Architects may be trusted to have assigned it.

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Mr. Robert Atkinson's exhaustive report upon the scheme for a civic centre for Bath, upon which he and Mr. George L. Alexander were commissioned to advise, was worth the labour that has been devoted to its preparation, even though, in the fortunes of war, it may seem to have but a slender chance of materialising in the near future. As a sincere and scholarly study of a most interesting problem, it is an important contribution to the already voluminous literature of town planning and civic design, and as such it has a specific value that is independent of its fate as a practical proposition. A merely academic exercise in this kind is not without profit to producer and peruser; but there is more vital force where the scheme is actual, and its author works under the inspiration of a hope that is not entirely groundless.

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At the same time, this very quality has its obvious defects, because an artist working to a commission is bound down by considerations which the free-lance may cheerfully disregard. But while the free-lance is tempted to evade the problems, the commis-

sary must solve his problems in more or less strict accordance with the given factors. This is, perhaps, a wholesome discipline, when the architect is strong enough to determine, in the bizarre language of the old hymn, "Out of my stony griefs Bethels I'll raise"; and there is nothing more secure of admiration than the happy solution of a stubborn difficulty. It is even credible that the restrictions of rhythm and metre have evoked some of the finest ideas in poetry; and that the limitations imposed upon the architect, or the engineer, by various antagonistic conditions have often stimulated not merely ingenuity, but finer issues, is a commonplace of the annals. With respect to the Bath scheme, there is no reason to despair of its taking effect. Generally, from the revived national consciousness which must result in the cultivation of home interests, and specially, from the sedulous avoidance in future of the spas and "cure" resorts in enemy countries, Bath should profit hugely, and should therefore see at no very distant date a revival of her ancient glories. If the proposals of Messrs. Atkinson and Alexander were carried out, Bath would become irresistible.

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Professor Harrower, to whose delightful lecture on "The Unity of Greek Art" reference was made in these columns last week, compares the Greek ode with Greek architecture, with the object of showing that both are alike manifestations of the Greek love of delicate perfection of form. By an odd coincidence, there came into our hands simultaneously with the report of Professor Harrower's lecture the issue of the Journal of the R.I.B.A. containing a notice by Mr. Herbert Wigglesworth of the Greek section of Choisy's "History of Architecture," in which the following quotation occurs: "A rhythmical harmony is introduced into the composition in both methods [the modular and the graphic], only to be compared with that of versification. The two rhythms of language and architecture are closely allied; they seem to respond to the first awakening of taste. Greek literary prose only commenced at the time of Herodotus—that is, about the beginning of the fifth century. Until then verse was the only medium of recording thought. The rhythm of speech and that of architecture correspond. They are two simultaneous manifestations of the instincts of one epoch." As there can be no doubt that the coincidence is purely accidental, it therefore affords the more striking proof of the force and aptness of the analogy; which, indeed, was long ago anticipated in the somewhat hackneyed saying that "architecture is frozen music." We could wish, by the way, that Professor Harrower, permeated as evidently he is with the Greek spirit, would allow himself further opportunities of discoursing upon it in the admirable style of the lecture delivered to the Aberdeen Architectural Association. A further extract from this lecture appears on page 113 of the present issue.

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Perhaps, after all, the coincidence is not so very extraordinary, seeing that most discourses on art draw largely on music for terminology as well as for similitudes. Even that most philosophical of writers on architecture, Mr. Geoffrey Scott, cannot resist this temptation: "But not the less [for its exuberant variations] does the Renaissance employ the language of Humanism; and hence its unsevered ties with classic architecture, its reliance on the 'Orders,' its perpetual study of the past. Still, as in antiquity, it speaks by mass, line, coherence; as in antiquity, it still builds through these a congruous setting to our life. It makes them echo to the body's music—its force and music and repose." He goes still farther—perhaps too far: "And the mind that is responsive to that harmony, it leads enchantingly among the measures of a dance in stone."

HERE AND THERE.

THOSE views of the London of yesterday which the print-seller displays in his window have always a fascination for me. Ackermann's aquatints, gaily coloured, packed with the riotous interest of Rowlandson's men and women, are a constant attraction, and now and again I see one or two plates from that series of lithographs of London as it was in the 'forties which Thomas Shotter Boys produced. Boys's lithographs were done in the days when the popular photograph had not been thought of; the Daguerreotype was the best that could be done then; and so the careful Boys set to work, producing lithographs which lost in artistic value what they gained in exactness; and a very ready sale he found for them. His portfolio is rare to-day, but having come upon a complete and perfect copy, I have taken occasion, in the "Architectural Review" for March, to publish a selection of ten plates, the best of the series. The illustrations are the main feature, but a careful study of each having resulted in the divination of some things which are not apparent to the casual glance, I have entered upon a running commentary at some length, and, following the illustrious precedent of Mr. George R. Sims, I am here announcing the fact. London at all periods is fascinating, but this London of the 'forties which Boys shows us is particularly arresting because it is near enough to our own day to set up some striking comparisons. The plates so admirably reproduced in the "Architectural Review" are, I think, immensely interesting on this account. They show us Cheapside running right down to the Mansion House, with no Queen Victoria Street opening upon the scene, with St. Mildred's, Poultry, in position; Piccadilly with the Egyptian Hall, the old entrance to Burlington House, and the untouched eighteenth-century houses; Pall Mall and its clubs with Sir Robert Smirke's plainer front to the Carlton, which Sydney Smirke made grandiose in the 'fifties after the manner of Sansovino; Regent Street as it was before the spoilers had pulled Nash's splendid scheme to pieces, and with Cockerell's chapel gracefully displaying a scholar's knowledge of Classic; Charing Cross with Northumberland House across the space where the Board of Works cut their inglorious avenue to the Embankment; the Strand at Temple Bar, when Wren's triumphal barrier still spanned the roadway: and all these street views enlivened with vehicles and costumes that have long since disappeared. I have dipped into Besant—

"In the streets we observe, to begin with, that the shop-fronts are small; that they are not decorated and 'dressed' as at present with an exhibition of things costly and precious. . . . In the road, which is not so crowded as to-day, you observe the covered wagon from the country, and the brewer's dray, an infernal instrument for getting as much noise as possible out of the street (it effects this by having no wheels); the hackney-coach, with its pair of horses, carries its passengers from Hackney to the drapers of Ludgate Hill; there are still sedan-chairs to be seen oftentimes with ladies in them: there is the cabriolet, a two-wheeled vehicle in which the driver is perched on a little seat beside his fare—'a mile o' danger at eightpence,' Mr. Weller called it. The town traveller, as well as the country traveller, goes about in a high gig with a 'knowing' mare, which he drives with great dexterity. The omnibus rolls and staggers along with its twenty outsiders, the stage-coaches, splendidly mounted, drive gaily through the streets; there is not so much crowding as at present. . . ."

And I have dipped into Sala—

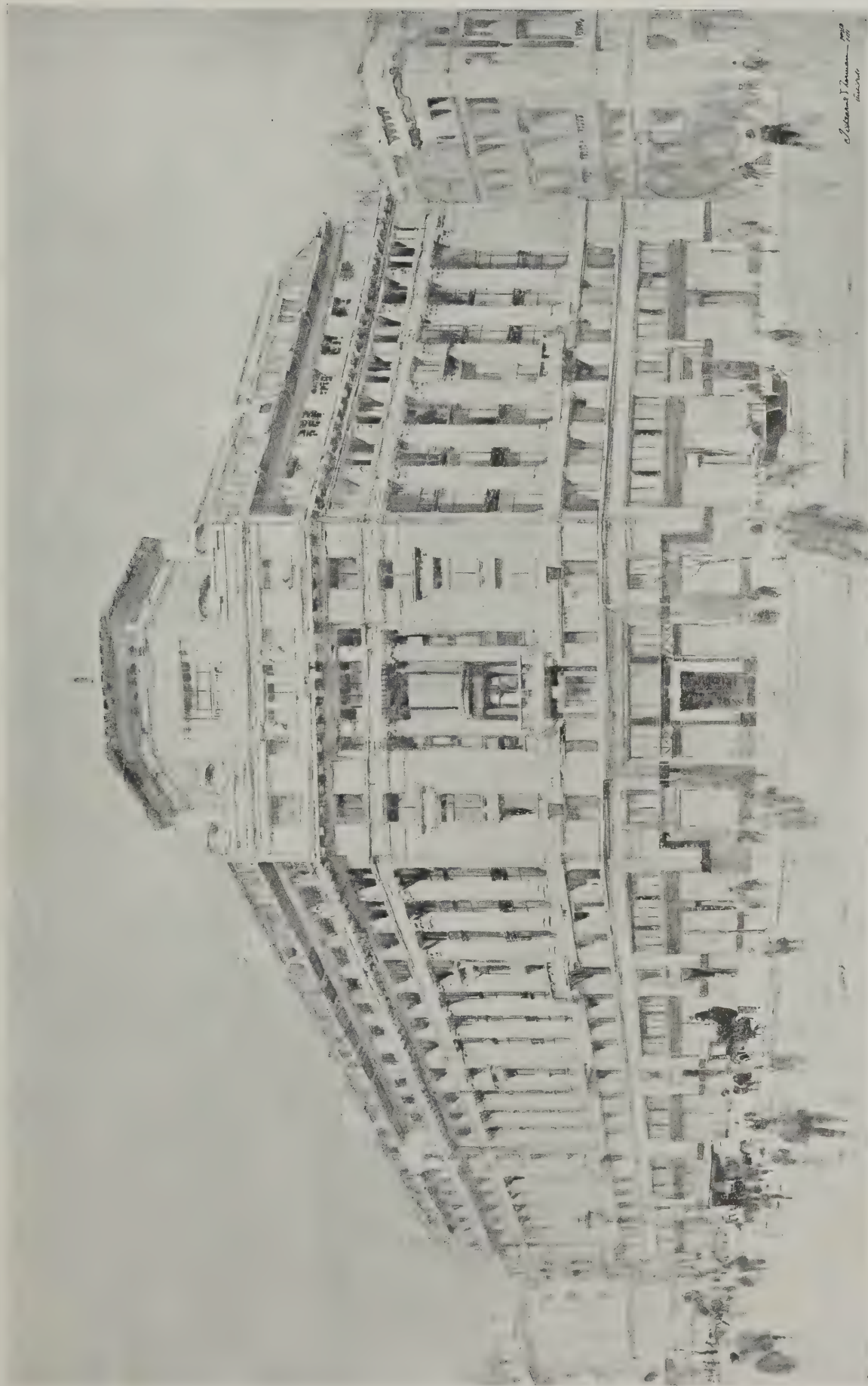
"The old articles of furniture that I loved are

things departed. The mirror, with its knobby gilt frame and stunted little branches for candles, the podgy eagle above it, and its convex surface reflecting your face in an eccentric and distorted manner; the dumb waiter, ugly and useful; the dear old spinet, on which Aunt Sophy used to play those lamentable pieces of music, the 'Battle of Prague' and the 'Caliph of Bagdad'; the old cheffonier, the 'whatnot' and the 'Canterbury'; the work-box with a view of the Pavilion at Brighton on the lid; the Tunbridge ware (supplanted now by vile, beautifully painted, artistical things of papier-mâché, from Birmingham forsooth)—gone, and for ever."

And what with Besant and Sala and Ollier and Knight's "London" of 1844, there are some extensive notes on these lithographs of the metropolis as it appeared in Early Victorian days.

Dipping a little further into that mine of raciness which Sala issued in the 'sixties, and finding something which is not included in the "Review" article I may give here his account of the Burlington Arcade: "At first the shops of this Arcade were small and dark. They sold no articles of positive necessity: the useful arts were repellent to Burlingtonian notions of industry; and luxury was almost exclusively purveyed for. Burlington (as became a comital godfather) was intensely aristocratic. Boots and shoes and gloves were certainly sold; but they fitted only the most Byronically small and symmetrical hands and feet; none but the finest and most odoriferous leathers were employed in their confection, and none but the highest prices charged for them. The staple manufactures of this Arcade have been in turns jewellery, fans, feathers, French novels, pictorial albums, annuals, scrap-books, caricatures, harps, accordions, quadrille music, illuminated polkas, toys, scents, hair brushes, odoriferous vinegar, Rowlands' Macassar Oil, zephyr paletôts, snuff-boxes, jewelled whips, clouded canes, lemon-coloured gloves, and false whiskers. Scarcely a fashionable vice, an aristocratic frivolity or a Belgravian caprice but had (and has) a representative in Burlington Arcade. It was a little Vanity Fair. I have walked it many and many a time for years, thinking of John Bunyan, and wondering which was Britain Row and Portugal Row. There was but one active handicraft exercised in the Arcade, and that was hair-cutting. The handicraftsmen cut your hair in sophisticated saloons decorated with fallacious mural paintings of impossible Grecian landscapes, with flaming Greeks and Turks fighting. Below they inveigled you to buy drugs and potions wherewith to dye the gray hairs you should be proud of, blue black; and stuffs to make you emulate the smell of the civet, or the musk rat, and hogs' lard condimented into bears' grease, and wigs—woven lies made from dead men's hair to thatch live fools. Further on, there were boots to pinch feet, corsets to tighten waists, and gloves to cramp hands. Boys with bundles were rigidly excluded from the precincts. Smoking was not allowed through its length or breadth. It was paraded by padded, tight-booted, tight-girthed, wigged old beaus striving to look like boys of twenty; by boys aping the vices of old men; by carpet warriors, and by knights fresh from Almack tournaments." Burlington Arcade has not, like the Lowther Arcade, been swept away. Apart from the storey which Professor Beresford Pite very dexterously added, it retains its old appearance and associations; and if we but alter the costumes we shall find the human element in it to be very much the same as it always has been throughout its hothouse existence.

UBIQUE.



CURRENT ARCHITECTURE (SERIES III.). XXII.—EMPIRE HOUSE, INDIA HOUSE, AND CANADA HOUSE, KINGSWAY, LONDON.
TREHEARNE AND NORMAN, ARCHITECTS.



CURRENT ARCHITECTURE (SERIES III.) XXIII.—CANADA HOUSE, KINGSWAY, LONDON,
TREHEARNE AND NORMAN, ARCHITECTS.



CURRENT ARCHITECTURE (SERIES III.). XXIV.—YORK HOUSE AND ALEXANDRA HOUSE, KINGSWAY, LONDON.
TREHEARNE AND NORMAN, ARCHITECTS.



SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.), XXVI.—SHOP AT DORKING, SURREY.

OF THE
UNIVERSITY OF ALABAMA



At Blackheath, London, S.E.



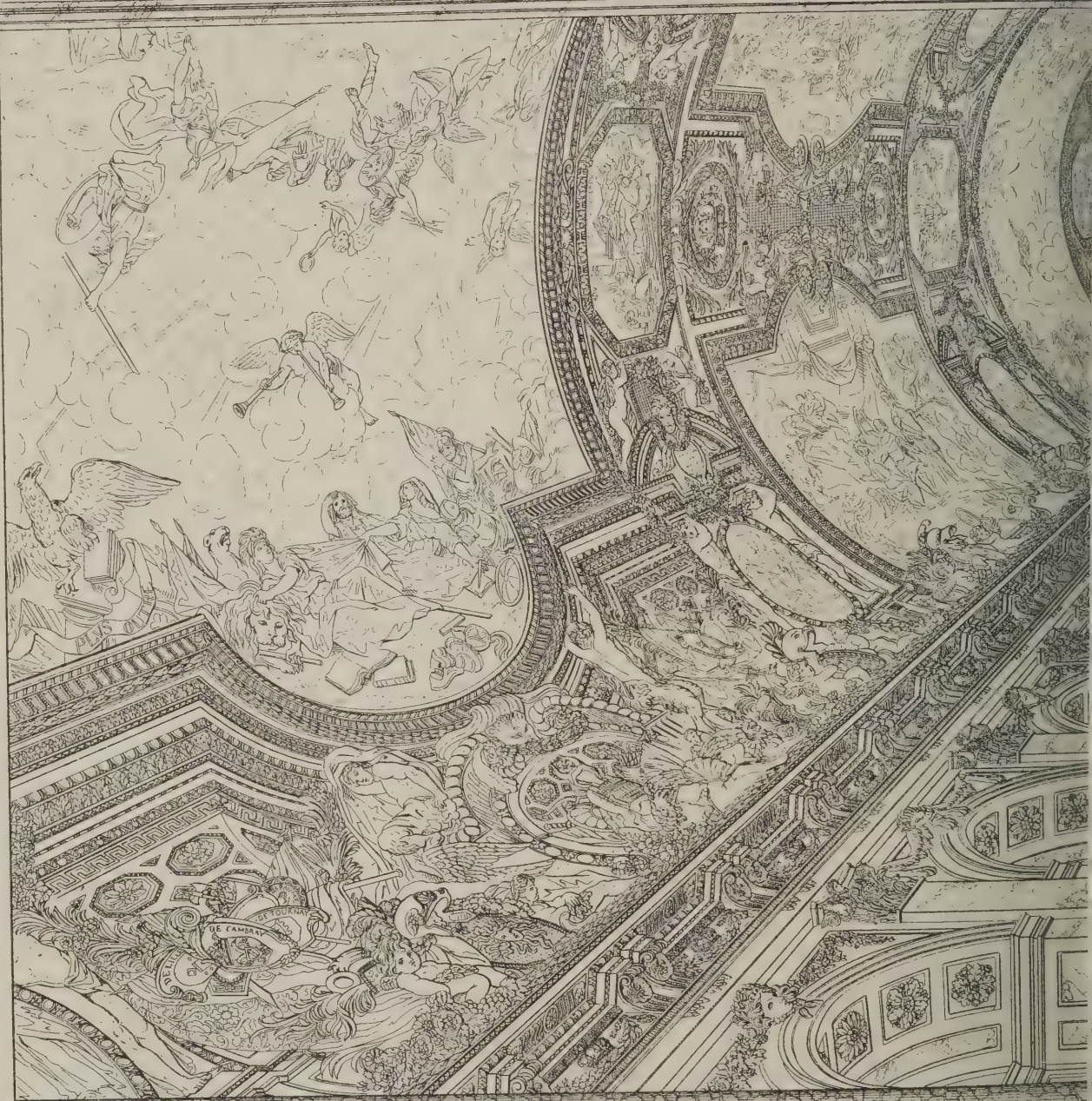
In the Cavalry Club, Piccadilly, London.

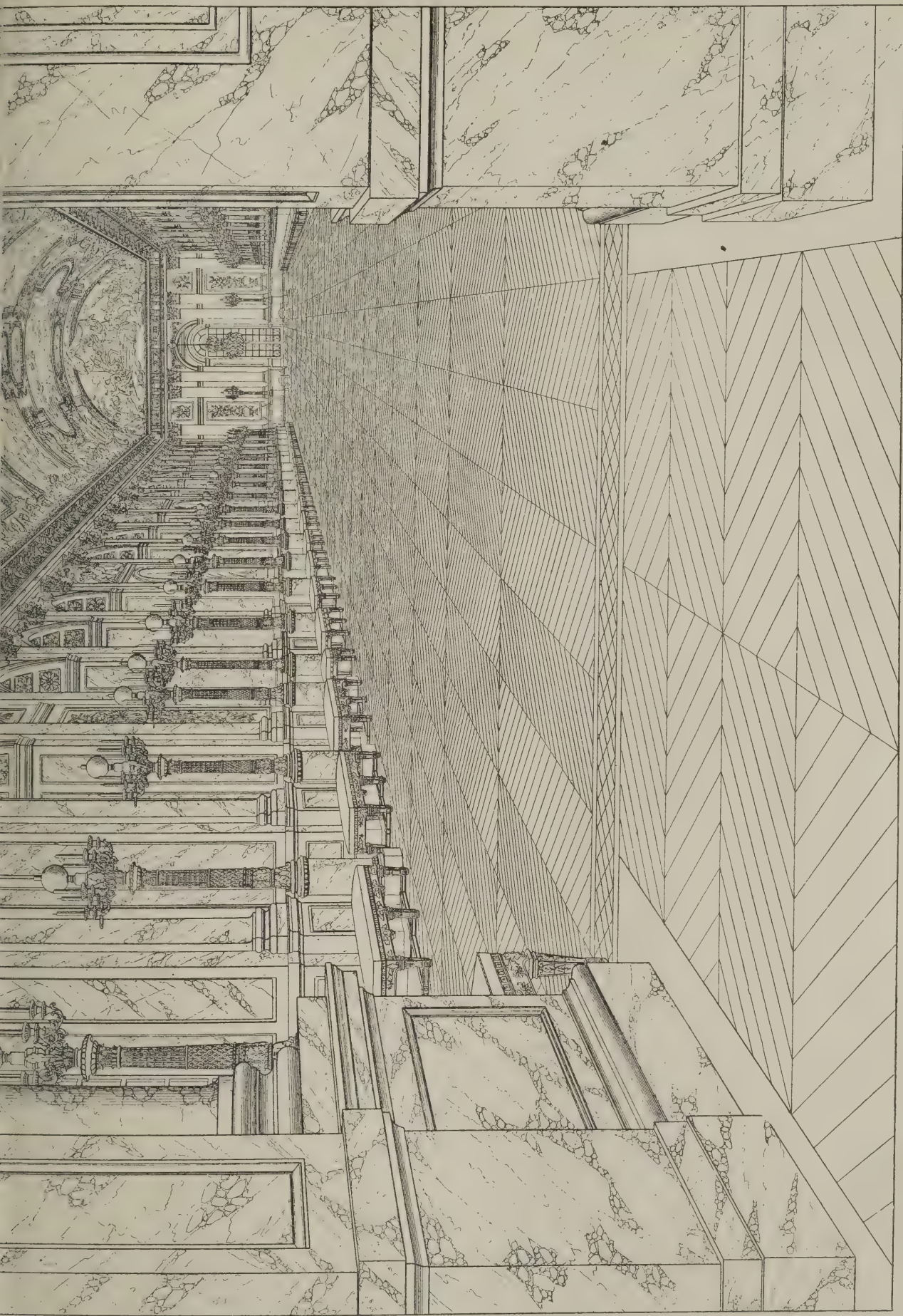
DETAILS OF CRAFTSMANSHIP (SERIES II). III.—CARVED ENRICHMENTS ON MANTELPieces.



ENGLISH INTERIORS. III.—THE GREAT HALL, PENShurst. KENT.

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MONUMENTAL ARCHITECTURE. XLIV.—GALERIE DES GLACES, VERSAILLES.
MANSART, ARCHITECT. CEILING PAINTINGS BY LEBRUN.

THE PLATES.

Buildings in Kingsway, London.

WE illustrate this week some of the most important buildings which have recently been completed in Kingsway, the great new thoroughfare that extends from the Strand to Holborn. These buildings by Messrs. Trehearne and Norman, are at the southern end of the street. At the eastern junction with Aldwych there is a large block comprising Empire House, India House, and Canada House, and it is to be hoped when the time comes for erecting another block at the opposite corner, a similar design will be repeated, so that at the entrance to Kingsway there may be two sentinel buildings of uniform character. The block comprising York House and Alexandra House is on the western side of the street, and in connection with this block it is only fair to the architects to mention that the buildings were originally intended to form part of a triple group, comprising a central building of 96 ft. frontage, with wings 80 ft. in width. The design was approved by the Council, but the estimated cost was so great that a start could only be made with the wing on the south side, namely, York House; and when later it was desired to obtain the other two sites, it was found that the Council had already disposed of the northernmost, and the architects had accordingly to adapt the design of the central building, Alexandra House, in the best manner possible. All the buildings illustrated are of steel-frame construction, faced with Portland stone. The general contractors for Empire House, India House, and Canada House, were Messrs. William Taylor and Co., of Hammersmith. The steelwork for India House was supplied and erected by Messrs. Archibald D. Dawnay and Sons, Ltd., and that for Empire House and Canada House by Messrs. Power's and Deane, Ransome's, Limited. The stone carving on the buildings was carried out by Messrs. E. J. and A. T. Bradford, of London, S.E., who also executed the cast-lead lions' heads and terminal to the octagonal turret on Empire

House. Among other sub-contractors were the following: Art metal work and exterior ironwork, Messrs. Strode and Co., and The Birmingham Guild, Ltd.; marble work, Fenning and Co. and Walton, Gooddy and Cripps, Ltd.; lifts, Waygood and Co.; metal shop-fronts and windows, The Crittall Manufacturing Co., Ltd.; horizontal and vertical damp-courses, and asphalt covering to cornices, roofs, etc., Thomas Faldo and Co.; electric lighting and intercommunicating telephone installations, Locke and Soares; door springs, etc., Robert Adams; tiling and mosaic work, Carter and Co., of Poole.

Shop at Guildford.

This is a good example of the use of curved windows for a shop front—a very favourite treatment in the Late Georgian period. Variations of this particular design are frequently met with in small country towns, the gently curving fronts making particularly attractive show-cases. Evidently this shop front was inserted in a building of earlier date, the upper portion being almost Stuart in character.

Mantelpiece Enrichments.

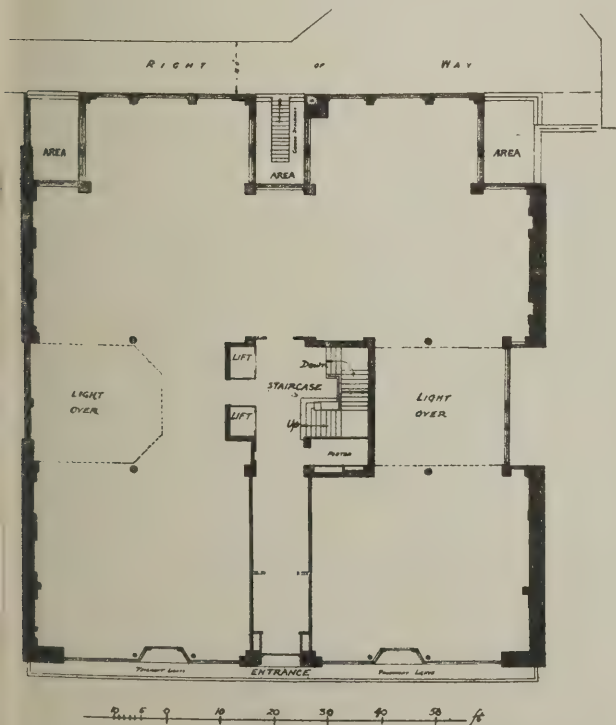
The mantelpiece at Blackheath is of the George II. period, executed in wood finely carved and painted white. It has columns of orthodox Ionic order, and the frieze is enriched with a fret pattern and rosettes. The panel in the centre, bearing a swag of fruit and flowers, forms the focus of interest. The Cavalry Club mantelpiece is one of two in the coffee room. They are both similar, and originally must have been in what was the drawing-room of the Georgian house. They are of William Kent type.

The Great Hall, Penshurst.

Penshurst Place, the seat of Baron de L'Isle and Dudley, is an example of that delightful manner of vernacular building which preceded the Renaissance in England. For the most part it dates from the sixteenth century, but some parts are earlier. Among this earlier work is the great hall, built by Sir John de Poulteney towards the end of the fourteenth century. With its open timber roof and screen with minstrels' gallery over, it is a typical example of its period, the panelling and carving on the screen being exceptionally interesting. Penshurst in recent times has received the restorer's attention, but the screen in the great hall has, we believe, been very little touched.

Galerie des Glaces, Versailles.

The Galerie des Glaces is one of the most superb galleries in Europe. It is 240 ft long, 35 ft. wide, and 42 ft. high, commanding beautiful views of the gardens from its seventeen large windows, opposite which are as many mirrors in gilded niches. The paintings on the ceiling, distinguished by great harmony of colouring, were executed by Charles Le Brun during the years 1679-83. They represent the achievements of Louis XIV., presented in thirty pictures. Boileau and Racine composed the inscriptions for each of the subjects, which are set within frames of carved and gilded sculpture of indescribable richness and variety. The great trophies of gilt bronze upon magnificent coloured marbles, and the twenty-four groups of lovely children in gilded stucco along the cornice, are due to Coysevox, and the other enrichments are all by the first artists of the day. Jules Mansart (1646—1708) was the architect. This gallery was originally the State ballroom of the palace, and has been the scene of some of the most notable gatherings in French history, from the days of the Roi Soleil down to modern times. It was in this room, in 1871, that King William of Prussia was proclaimed Emperor of Germany. Our illustration is reproduced from a steel engraving of most amazing quality.



CANADA HOUSE, KINGSWAY, LONDON: GROUND-FLOOR

PLAN.

TREHEARNE AND NORMAN, ARCHITECTS.

RECENT ARCHITECTURAL WORK IN INDIA.

THE "Annual Report on Architectural Work in India for the year 1914-15," by the Consulting Architect to the Government of India (Mr. J. Begg, F.R.I.B.A.), contains twenty-two plates showing photographic views of buildings recently completed. Among these are five illustrations of the central block of the Prince of Wales Museum of Western India, at Bombay, which Mr. Begg regards as "the most important work of progress which has appeared for many years." Summarising the history of this project, he recalls that the competition for it was instituted in 1908, and was open to architects resident in India, to whom were added four selected and invited British architects. The competition was won by Mr. G. Wittet with a design in an adaptation of a phase of Byzantine. Though the planning and general arrangements of this design were generally admitted to be the most suitable of all among those submitted, yet so strong a feeling of distaste to the unfamiliar style of the exterior was manifested that it was proposed to reject the design in favour of one of the others. It was found, however, that none of the others seemed to fulfil the requirements so well in point of planning, nor to be capable of construction without considerably greater expenditure. Eventually it was decided to retain the chosen plan, and that its author (he having been in the meantime appointed consulting architect to the Bombay Government) should undertake the construction as part of his ordinary duties, remodelling the elevations in a style based on indigenous work, an example of such a style being seen in the new Bombay General Post Office, then nearing completion.

Mr. Begg states that the portion of the museum now finished is that for the housing of the art and archæology collections, and that it is intended ultimately to be flanked by two other buildings—for industries and natural history respectively. He

regards it as "a highly successful piece of work and specially interesting for the admirable way in which forms and architectonic ideas of indigenous character have been employed without sacrifice either of its modernness and suitability to its purpose or of its consonance with the true spirit of Indian work. This," Mr. Begg declares, "is living work and no experiment in antiquarian revivalism—no counterfeit of antiquity, but a model of what Indian modern public building should be." He adds, however, that he does not think the architect has been quite successful in the design of the porch. "The segmental line of the cornice coming over the 'Saracenic' arch beneath is scarcely so happy as when a horizontal cornice line is introduced. Another legitimate criticism seems to be that the building might have gained in 'breadth' if the pinnacles which occur over the verandah had been omitted. Such minaret-pinnacles seem best fitted to be seen against the sky, and to perform some part of the same function in relation to the skyline as is performed by the chimneys of a style evolved in colder latitudes. Where, as in the present case, they are backed by a portion of solid walling, they seem to lose some of their meaning and appropriateness."

If we do not fully share Mr. Begg's admiration for this exterior, that is perhaps because we are more apt to judge it by Western standards, or because of the unfamiliarity of "the indigenous manner of design." Mr. Begg holds that "with the completion of this building, this particular school of design may be considered as having established itself, and as having done a notable service to Indian art by demonstrating the possibility of the existence of a living modern Indian architectural style inspired by the work of the past, and employing the still living indigenous tradition, evolved on the soil of India amid the stress of modern requirements and conditions."



PRINCE OF WALES MUSEUM, BOMBAY: ARTS BUILDING. G. WITTET, ARCHITECT.

ions, and in full recognition of modern methods of construction and building administration." Whether this is indeed the kind of compromise upon which the architecture of India can be firmly based is a question to which, even after waiting to see how the problem is solved at Delhi, a confident answer would be hazardous; but, in any event, it is extremely interesting to see an illustration of the building upon which the Architect to the Government of India sets such high hopes. It is mainly for this reason that we reproduce it.

Of the twenty-one plates of photographic views comprised in the report, three show post-offices, four relate to two churches, four to the Prince of Wales Museum at Bombay; the remainder showing respectively the steelwork of the Rangoon Telegraph Office, the East Baigul Bridge, the Judicial Commissioner's bungalow at Karachi, a tramway shelter and a police outpost at Calcutta Maidan, the administration block of the General Hospital at Rangoon, quarters for the Director of the Pasteur Institute at Rangoon, a fireplace at the Allahabad Government House, the lady students' hostel at Lucknow Medical College, the civil court at Cuttack, and the Government House at Puri. Except for a "lay-out" of Puri, no plans are given—from the architect's point of view a regrettable omission.

There is a further satisfaction in the evidence the report affords that in India architecture has at length got into the hands of architects. Formerly it was entrusted almost exclusively to engineers. Now, however, Bombay, Madras, Bengal, Burma, the United Provinces, Bihar and Orissa, and the Punjab have as consulting architects properly qualified men, most of them Fellows or Associates of the R.I.B.A.; and their detailed reports of work done during the year will afford valuable data for some future historian of the architecture of India. Mr. Begg, in his own exceedingly interesting report, which contains much valuable critical comment, as well as providing an authentic record of the year's work, states that in India the use of such materials as "Poilite" and "Eternit" for roofing is steadily increasing. In certain places in the hills, he says, it is possible to find very good slates, but the use of these is attended by two great drawbacks—high cost, directly owing to the limited demand for the material, and indirectly to the weight, necessitating the use of heavier roof-scantlings; and, further, owing to the low standard of skill in splitting and working, it is difficult to obtain a thoroughly reliable slate roof. The development of the iron and steel trade in India may in course of time solve some of the first of these difficulties by enabling the use of steel roof construction to be extended—as it may open up possibilities in many other directions in building construction.

Decided improvements, Mr. Begg remarks, are also to be observed in the interior finish of buildings, especially with regard to the ceiling. No longer is the choice between ceiling-cloth and matchboarding. Asbestos sheets can be used with good effect; but the plaster ceiling is no longer so difficult to obtain as of old in most localities. Better locks and door furniture generally are now obtainable, though there is still room for improvement in these goods. Recently some progress has been made in the introduction of steel windows and doors in substitution for the old wooden ones, which, however well made, soon yield to the severities of the climate. It is believed that steel doors, which are already in use in Delhi, will be generally adopted in the new capital. Finally, Mr. Begg says, the greater understanding that is observable as to the use of reinforced concrete and other improved means of permanent floor construction has greatly increased the resources at the disposal of the architect.

THE GREEK SPIRIT.

IN the course of his lecture (of which an abstract was given on p. 103 of last week's issue of the Journal) to members of the Aberdeen Architectural Association, on "The Unity of Greek Art," Professor Harrower observed that Greek theorists did not regard architecture as one of the fine arts. It was not mimetic, it did not represent anything, least of all did it represent the only thing that the Greeks of the classical period counted the proper object of artistic representation, the human form, and the human spirit. This was in entire agreement with their painters' disregard for landscape. Yet Plato united architecture with music as possessing an ethical meaning and influence, using language of the latter art that was somewhat of a stumbling-block to us with our tough phlegmatic northern natures, for no one at the present day saw any need for legislative enactment to stamp out the inanities of up-to-date musical comedy. But it was the common Greek belief that a man could ruin himself body and soul as effectually by bad music as by drunkenness or any other vice. The average man kept his æsthetic nature carefully secluded, and allowed it an outing on rare occasions. When he went to a picture exhibition he came away with a feeling of having done something meritorious, as if he had given £5 to a charity. To the art that was not boxed up in a museum, but made a daily appeal to his eyes, the art of architecture, he was almost equally insensible. If an architect put two hopelessly degraded copies of the Choragic Monument of Lysicrates one above another as a finish to a church tower, the average citizen supposed it was classical and therefore all right. He did not gnash his teeth; much less was he anxious as to the state of the architect's soul. The country was full of the vilest Roman calumnies on Greek architecture, which were as utterly out of place in their climate as a business man would be in Union Street with nothing on but a table-cloth. Having no acute feeling for the beauty or ugliness of artistic production, the average man did not take the further step of thinking about it in terms of ethical good or evil. Yet this was what the Greeks did. The creations of Greek art, which were the marvel of all time, did not come, professor Harrower remarked drily, by the waving of the magician's wand. They were the fruits of hard incessant work by a succession of highly gifted artists whose energies were confined to narrow spheres and exercised in a limited number of types, so that their artistic power was concentrated and not dissipated. It did not follow that if Prussian architects or Prussian painters had worked under similar conditions the result would have been the same, but it did show that even to the highest artistic genius the world had ever seen or was likely to see, the *palma* were not *sine pulvere*.

[The author of this lecture, Dr. John Harrower, M.A., LL.D., was educated at Aberdeen University and Pembroke College, Oxford, and at the former University he has been Professor of Greek since 1886. Further comment on the lecture appears in the Editorial columns of the present issue.]

TO OUR READERS.

In view of the Government restrictions on the imports of paper and pulp, readers are requested to obtain their copies of this Journal from one source, by placing a regular order with a newsagent, instead of buying copies haphazard; in this way, by reducing the wastage of copies that necessarily attends the effort to meet the convenience of casual purchasers, they will share with us the satisfaction of contributing in some degree to the great object of national economy.

ARCHITECTS IN THE WAR.

In the R.I.B.A. Journal of March 4 it is recorded that Mr. Gordon Hake, A.R.I.B.A., second-lieutenant, 1st Wilts Regiment, was wounded at Hooge on June 16. Mr. William Noel Jobson Moscrop, student R.I.B.A., lieutenant, 5th Durham Light Infantry, was mentioned for gallant conduct in the field in Lord French's despatch published on January 1. Lieutenant Moscrop is the son of Mr. W. J. Moscrop, F.R.I.B.A., and was called up with his regiment at the outbreak of the war. In the same issue is published the twenty-fifth list of Members, Licentiates, and Students serving with the Forces, the total to date being 55 Fellows, 419 Associates, 220 Licentiates, and 269 Students. The list is as follows:

Fellows.

Blomfield, C. J., captain, Artists' Rifles.
Hartree, John, A.S.C. (M.T.), officer on motor convoy.

Associates.

Hall, Alner W., captain, Artists' Rifles.
Wellburn, George T., Royal Engineers.
Wright, Cecil L., Artists' Rifles.

Licentiates.

Hoffman, G. Spencer, 2nd London Sanitary Company, R.A.M.C. (T.F.); gazetted lieutenant June 17, 1913; promoted captain December 17; now at the front in France.
Smith, W. Mackenzie, 1st Battalion Transvaal Scottish Regiment.
Watson, Henry B., 6th Canadian Field Engineers.

Students.

Blackwell, J. W., U. and P.S. Corps (Royal Fusiliers); joined in 1914, and now in the firing line in France.

Ovenden, Edgar William Clowes, West Kent Yeomanry; has served in Gallipoli and in Serbia.

Promotions.

Major E. J. Bridges, A.R.I.B.A., to lieutenant-colonel R.E.

Lieutenant Michael T. Waterhouse (son of Mr. Paul Waterhouse) to captain, Sherwood Rangers.

An Associate's Narrow Escape.

Mr. Frederick Thwaites Bush, A.R.I.B.A., a private in the 29th Vancouver Regiment, 2nd Canadian Expeditionary Force, was one of the thirty volunteers whose gallant exploits were described

by the Special Correspondent at Headquarters in the papers of February 4, after their most successful attack on one of the German front-line trenches during the night of January 30 to 31, when they destroyed two enemy machine guns, killed over forty of the enemy, and taking some prisoners, all returning safely to their own trench, with but two of their party wounded. Mr. Bush had a marvellous escape, being caught in our own barbed wire entanglements amid an inferno of machine-gun, rifle, and artillery fire, but managed to force his way through to safety minus part of his equipment. Before the war Mr. Bush was engaged in the building of the new Canadian Pacific Hotel at Vancouver. He was previously on the staff of H.M. Office of Works, and a member of the Artists' Rifles. On the outbreak of the war he immediately volunteered for active service.

THE REBUILDING OF FRANCE

Mr. R. Franklin Tate, special correspondent of the "Daily Chronicle," in communication from Paris, states that an inter-Ministerial Committee has been formed by the French Government with a view to providing ways and means for the reconstruction of the destroyed or damaged buildings and plant. The committee, which consists of representatives of the Ministries of the Interior, Commerce, Agriculture, Industry, Labour, Finance, War, Colonies, and Fine Arts, is already considering a general scheme drawn up by M. Revault, Deputy of the Meuse.

Whole villages and even towns will have to be rebuilt, and when the hour of victory has struck all the refugees will be eager to return home and begin life anew.

M. Revault recognises that it will be impossible to reconstruct the destroyed buildings as they were before the war. He takes the view that only a portion of the available funds should be employed in the construction of light semi-temporary, but at the same time comfortable, houses pending a return to normal conditions. He proposes (1) that a certain number of models be prepared, adapted to the needs of the various trades and professions for which they will be required; and (2) that departmental workshops be established for the construction of these types, the State supplying merely the funds. These workshops will have a co-operative character and will be managed by men of the trade.

Finally M. Revault urges that all the children of refugees, from fourteen to sixteen years of age, be taught at once rough and-ready notions of the trades which they will require to know something about. Courses of practical instruction should be at once started, with a view to forming a fresh supply of workmen.

SOCIETIES AND INSTITUTIONS

The Development Plan for London.

The London Society state in their annual report that they have now seven architects steadily at work on the Development Plan of Greater London under the direction of gentlemen who have given up much of their time for this purpose. The committee in charge is now constituted as follows: Sir Aston Webb, K.C.V.O., C.B., R.A., chairman; Mr. Carmichael Thomas, R.A., chairman; Mr. Raymond Unwin, Professor Adshead, N.W. Section; Mr. Arthur Crow, N.E. Section; Mr. W. R. Davidge and Mr. Herbert Shepherd, S.E. Section; Mr.

H.T.B. BARNARD
EDWARD S.A. BAYNES
HUGH BROCKMAN
C.F. BUITT
J.D. COLERIDGE
L.A. ELSWORTH
HUMPHREY MORLEY GIMSON
G.L. HANNAFORD
R.M.F. HUDDERT
T.M.K. HUGHES
JAMES HUTTON
OSWALD P. MILNE
F.B. NIGHTINGALE
HUMPHREY C. PLOWDEN
A.F. ROYDS
S.R. TAVINER
W.P. TRIBE
W.H. WARD
BASIL G. WATNEY
HUBERT J. WORTHINGTON
C. PEAKE ANDERSON
R. CHURCH
S.H. EVANS
T. EVANS
GARNET A. FARMER
G.H. GOLDSMITH
N.J. HANNEN
F. HARRILD
L.M. HOWARD
J.A. MACDONALD
JAMES MACGREGOR
GEORGE STEWART
A. RICHARDS
PAUL PHIPPS

Kings Royal Rifles
Buffs
Artists Rifles, London
Anti-Aircraft
Honourable Artillery Company
Leicestershire Regt
Artists Rifles, London
Artists Rifles, London
London Scottish
Army Service Corps
United Arts. V. R.
Royal Naval Division
Artists Rifles, London
Royal Engineers
Special Constable
N.W. Yorks. Regiment
Royal Navy
Manchester Regiment
Royal Field Artillery
S. Staffordshire Regt
Argyll & Sutherland High-landers
Fusiliers' Landers
Army Service Corps
British Red Cross Society
West Surrey Regiment
Ministry of Munitions
Cameronians, Scottish Rifles
Argyll & Sutherland High-landers
Sherwood Foresters

AN ARCHITECT'S ROLL OF HONOUR.

This is painted on the wall of the entrance hall of the offices of Mr. E. L. Lytens, A.R.A., F.R.I.B.A., at 17, Queen Anne's Gate, Westminster. It comprises past and present members of the Staff on War Service.

H. V. Lanchester, S.W. Section; Mr. H. J. Leaning and Mr. W. E. Vernon Crompton, N. Section; Mr. David Barclay Niven, S. Section (Mr. Niven is also superintending the S.W. Section while Mr. Lanchester is in India); Mr. Lawrence Chubb and Mr. Basil Holmes, Open Spaces; Mr. Robert Atkinson and Mr. E. Guy Dawber. Mr. A. E. Richardson has had entire control, and the Society expresses its indebtedness to him for the energy and skill he is expending in co-ordinating the immense amount of valuable information to be shown on the plan. The Society are working in cordial co-operation with the Royal Institute of British Architects. They have also been accorded the full sympathy and assistance of the borough councils, and particularly the co-operation of Colonel R. C. Hellard, C.B., of the London Traffic Branch of the Board of Trade. The cost of the plan will be about £1,000, of which at least £100 was still to be raised. We very sincerely trust that this admirable and valuable work will not be allowed to languish for lack of the necessary funds.

Architectural Association of Ireland.

Mr. Horace F. O'Rourke, Licentiate R.I.B.A., in a lecture on "Town Housing," delivered to the Architectural Association of Ireland, said that to those interested in the modern revival in Ireland, whether of her language, industries, or arts, it must be apparent that there was a great need for constantly urging on her people the dire necessity of proper housing for the working classes in her cities and towns. For the architectural student of housing and town planning Irish cities and towns afforded great scope for theory but little opportunity for practice. There were numerous areas in five of the principal cities of Ireland which in their housing conditions were a disgrace to civilisation. The real cause of the problem in towns was probably the town-tending movement, but that cause or explanation was not universally accepted. The Corporation of Dublin had found it necessary to appoint a special Housing Committee, which for several years had been struggling with a difficult and complicated task. The problem in Dublin was very grave, and a real work yet remained to be accomplished in the city to alleviate the lot and brighten the homes of our less-favoured fellow-citizens. Benefits conferred on them reacted in favour of the whole community. For that reason alone—apart from the higher joy of doing good to one's fellow-man—it seemed that the heroic task should be completed.

The Cockburn Association, Edinburgh.

At the thirty-ninth annual meeting of this Association, which was held in the Oak Hall, Edinburgh, the Right Hon. Sir H. G. Macdonald, K.C.B., in the chair, the annual report presented and approved recorded that, through the efforts of the Association, Murrayfield House has been reserved under the town-planning scheme. The Council of the Association have approached the Town Council to acquire the whole of Ravelston Estate—the situation of the property is one of the finest in the neighbourhood of the city; the proprietor of Thomson's Court has acceded to the representations of the Council to preserve the back portion of the Court, an excellent specimen of the older Edinburgh domestic buildings; the Association hope to succeed in obtaining a complete record, with adequate photographic

illustrations, of the inscribed lintels on old houses; and through the public spirit of Mr. Douglas Strachan the Association have arranged for the renewal on a consistent and artistic basis of the five new windows in Queen Margaret's Chapel at the Castle. The secretary is now Mr. Charles Guthrie, W.S., conjointly with Mr. A. E. Murray, W.S. We have previously had occasion to comment upon the admirable work that this Society is doing.

Aberdeen Society of Architects.

The eighteenth annual general meeting of the Society was held on March 7, when the officers for the session were elected as follows: President, Mr. H. Maclellan; vice-president, Mr. G. Watt, F.R.I.B.A.; hon. treasurer, Mr. G. B. Mitchell; hon. secretary, Mr. R. G. Wilson, jun., A.R.I.B.A.; ordinary members of Council, Messrs. W. J. Devlin, A.R.I.B.A., C. George, A. H. L. Mackinnon, A.R.I.B.A., J. R. McMillan, F.R.I.B.A., and J. Rust.

Builders' Clerks' Benevolent Institution.

Mr. Frederick Shingleton, M.V.O., has accepted the presidency of the Builders' Clerks' Benevolent Institution.

Dangerous Structures.

A paper on this subject is to be read before the Concrete Institute to-morrow (Thursday), March 16, at 5.30 p.m., by Mr. W. G. Perkins, M.C.I., District Surveyor of Holborn.

Proposed Amalgamation of Operative Masons.

The Operative Masons and Granite-Cutters' Association of Aberdeen has approached the United Operative Masons' Association of Scotland and the Operative Masons' Society of England with a view to amalgamating the forces of the three unions.

OBITUARY.

Mr. Alexander Drysdale.

The death is announced of Mr. Alexander Drysdale, a well-known member of the Edinburgh building trade. A native of Alloa, Mr. Drysdale more than forty years ago started business in Leith as a carpenter and joiner. He built up an extensive business, and carried through large and important contracts in the East of Scotland. He was recognised as an authority in the practical work of the trade and his advice was much sought after. He was one of the oldest members of the Edinburgh, Leith, and District Building Trades Association, in the affairs of which he took an active interest. He represented the Association upon the Board of the Scottish National Building Trades Federation, and in the preparation of the mode of measurement for carpenter and joiner work, which was only recently issued, he took a leading part.

Mr. W. Bell.

Mr. Walter Bell, builder and contractor, has died at his residence, 156, Effingham Street, Rotherham, after a long illness. He was seventy-three years old. He was a native of Rotherham, and learned the business of a cabinet maker, which his father had followed. For a time he was in partnership with his brother, Mr. John Bell, and afterwards became a builder and contractor, being responsible for large additions to the housing accommodation of Eastwood, Masborough, and The Holmes.

NEWS ITEMS.

A New London Building.

The superstructure of No. 22, Golden Square, Piccadilly, W., is being executed by Messrs. E. A. Roome and Co., of Hackney, under the supervision of Messrs. Naylor and Sale, architects, of Derby.

Housing at Swansea.

At Swansea Corporation Housing Committee yesterday it was stated that so great was the demand for houses that 1,000 people were on the books waiting for vacant houses. Large numbers of applications are soldiers' wives anxious to get smaller houses.

Headingley Town-Planning Scheme.

A draft of the Leeds (Buckingham House) town-planning scheme which has been prepared by the Corporation and approved by the owners, is to be submitted by the Local Government Board for their approval in accordance with Articles XIII. and XIV. of the Town Planning Procedure Regulations (Preparation of Schemes by Local Authorities), 1914.

Pencils for Architects.

The architect more than anyone requires a good pencil. It is his chief tool, and, therefore, he must have the very best quality and exactly the right grade. The "Venus" pencils, it will be found, meet all his requirements. They are already well known to architects, but those who have not yet tried them should write to Venus Pencils (Department No. 779), 173/175, Lower Clapton Road, London, N.E., for the set of nine short samples of different degrees which the makers offer to send free of charge.

The Survey of London.

The Local Government, Records, and Museums Committee of the London County Council have decided to discontinue the printing of further volumes in the series of the "Survey of London" until after the conclusion of the War, but the London Survey Committee propose to continue to collect, at their own expense, materials for the volumes pending the resumption by the Council of the work of publication. The committee have arranged for the exhibition at the Geffrye Museum, Kingsland Road, of the paneling removed from two rooms at No. 8, New Inn, and of a plaster ornament from over the front entrance to No. 17, North Side, Clapham Common.

New Aisles at St. Jude, Mapperley.

The Bishop of Southwell has consecrated two new aisles at the church of St. Jude, Mapperley. Hitherto the building had consisted of only chancel and nave. Previous to the alterations, the nave was a building 60 ft. by 24 ft., and originally designed with the idea of extension by means of transepts. For various reasons this scheme was not favourably looked upon when enlargement became necessary a few years ago. It was therefore decided to take out the north and south walls, and build aisles 12 ft. wide, each forming an arcade of four arches in place of the walls removed. These aisles have lofty ceilings, alternate bays being covered with flat and pointed roofs. Old two-light windows have been re-used, and large three-light tracery windows occur where the height of the pointed roofs allow of it. Eventually the building is to be extended 16 ft. westwards, and with another bay to the arcade, the rather too great width of the church for

its length will disappear. The old roof has been relaid with new tiles, and a good deal of alteration has been done to the original part of the building in connection with roof and heating. The church has only been closed for four Sundays during the operations. The seating accommodation has been increased from under 200 to 400, at a cost of about £3,000. The architects are Messrs. Heazell and Sons, and the work has been carried out by Messrs. Thomas Long and Sons.

Bothwell Castle, Haddington.

One of the interesting but rapidly disappearing features of Haddington of a by-gone day, the ancient and prominent pile in Hardgate, known as Bothwell Castle, will, it is stated, shortly be demolished. The Castle is a massive pile, with a roundel at one corner abutting upon the street and overlooking the river Tyne. It is an outstanding example of the old strongly built, small-chambered type of Scottish burghal dwellings that were a compromise between the keep and the homestead, and it comprises interesting architectural features. It contains the remains of the massive stone fireplace in the chamber known as "Bothwell's kitchen."

Trading with the Enemy.

The Controller of the Foreign Trade Department desires to call the attention of houses engaged in foreign trade, to the Royal Proclamation published in the "London Gazette" of February 29, containing a statutory list of firms of enemy nationality or association with whom all dealings by persons carrying on business in this country are prohibited. This list will be supplemented and revised from time to time. Transactions with persons on the statutory list are prohibited, subject to the same penalties as transactions with firms in enemy countries, except in cases where a general or special licence has been granted, permitting the transaction. Any application for a licence, should be addressed to the Controller, Foreign Trade Department, Lancaster House, St. James, S.W. In making application for licences it is requested that the following particulars may be given in each case: 1. The name and address of the applicant. 2. The name and address of the buyer. 3. The date of the order of the goods. 4. The nature of the goods in question. 5. The prospective date and port of shipment; if ready for shipment marks and numbers should be given, and the name of the actual consignee. 6. Whether the goods are season's goods, and if so when the season for them commences. 7. All other current orders from the same buyer. The envelope should be marked "Application for licence."

Charing Cross Bridge.

The following letter has appeared in "The Times":

Sir,—Even at such a time as the present the future of Charing Cross Bridge can hardly be without interest to Londoners. It is announced that the South-Eastern Railway Company have presented to Parliament a Bill empowering the company to spend a large sum of money on strengthening one-half of the present bridge, a work which the chairman states is not to be undertaken until after the war. This work when completed will add nothing to the much-needed accommodation for road traffic over the river at this point, but would inevitably prolong indefinitely the existence of the present unsightly bridge which the chairman of the company admits "is not an ornament to the river." Surely this is a proposal that should be deferred

till after the war, when the whole scheme, in which London is so much concerned, could be fully and carefully considered.

We are Sir, your obedient servants,
ERNEST NEWTON, President of the Royal Institute of British Architects.

ASTON WEBB, R.A., Chairman of Council, London Society.
February 28.

TRADE AND CRAFT.

The Manufacture and Properties of Torbay Paint.

The interesting old town of Brixham is situated on the promontory that shelters the picturesque Tor Bay on the south-west side, and is famous for its fishing industry and for the fact that here William, Prince of Orange, first set foot on the shores of England. It is also noted for its iron-ore mines and deposits.

About seventy years ago a Mr. Calley, who lived in a house in the New Road, started to build some fishermen's cottages on his adjacent property, but while in the course of making the foundations came across a deposit which on examination was found to be a natural ferric oxide of such peculiar properties that when converted into paint and applied to wrought iron it filled up the interstices and formed an integral part of the metal, and thus materially assisted in preventing corrosion and decay. He immediately stopped erecting cottages, and, in fact, turned those that were already put up into a factory for the making of paint, which he designated "Calley's Torbay and Chemical Paints," and registered the trademark of William of Orange stepping out of a boat on to the shore at Brixham, and used his expression, "I will maintain," for his motto.

To this day the original factory can be seen among the various buildings in the New Road Works, while the original deposit has been extended, and mines are now worked for the excavation of oxide of iron, from which the present Torbay Paint Co. derive their name and their registered trade mark "Torbay Paint."

This iron oxide, which is practically inexhaustible, is found in pockets which are of a volcanic nature and may be exploited near the surface or as far down as 100 ft. below, and was probably formed by the percolation of the water running from the iron ore and being caught in these pockets. On being brought to the surface it is taken to the washing works, where it is thoroughly pugged and run through a series of troughs, which take away all impurities and leave the pure oxide, which is then run through filter presses under heavy pressure. The next process is to convey it to the drying-room, where all moisture is extracted, and it is then put through the grinding mills, where 28 lb. cannon balls grind one against the other and air is forced in underneath, which takes the minute particles up through a canvas trough into a chamber, where it is allowed to settle, when it is found almost silk-fine.

The colour of this oxide is brownish, and is almost identical with the shade shown in the Torbay Paint Co.'s catalogue as their No. 1 Brown. To obtain other shades this oxide is calcined in retorts to a shade of red and also to a black, so that when it is mixed with zinc oxide innumerable shades of colour can be obtained.

When the company first started they confined themselves to the making of four shades, but at the present time they have over 100 standard shades, and it is pos-

sible for them to match any particular shade with reliability. They were the pioneers in the making of light shades from oxide of zinc in combination with oxide of iron, thus forming a paint which is non-poisonous and innocuous to the worker. They were also one of the pioneers in the enamel trade and varnish stain for wood floors.

"Torbay Paint" is made in one quality only, and prepared specially for every class of work, attention being given to the manipulation of the oil medium to obtain the best results for under-coating and finishing, the fact being that the first priming coat is the most important part of a painting operation, and has to fulfil a dual object, in that it must fill up the interstices in the surface of the material it has to protect, and ensure perfect adhesion for the subsequent preservative coatings. The paint is extremely fine ground by the aid of powerful machinery and each colour is standardised according to weight and has to pass through a very fine mesh before being sent to the customer.

The present partners are: Mr. Edwin Stevens (who has been associated with less than nine partners through his life) and whose two sons are at the head of the manufacturing departments), Mr. S. Freeman Burrows, and Mr. H. L. P. Allender.

The firm have extended their business all over the world, and this enormous development from the small beginnings seventy years ago may be fairly said to form a remarkable chapter in the romance of industry.

BUILDING INTERESTS IN NEW SOUTH WALES.

In the annual report of the Sydney New South Wales Master Builders' Association it is stated that during the twelve months under review there had been two serious factors exerting a depressing influence on the building trade, viz., the war and the drought extending over a considerable area of the State. Towards the end of the first quarter, however, there was some extent a revival, but subsequently further depression set in, and continued until the end of the year. The effect on the building trade had been to delay building works, though, fortunately, a very considerable amount of small residential work in the suburbs had been proceeded with. The war had also affected the building trade in another way. All imported materials, and those which, though manufactured locally, depended on imports for their raw material, had considerably increased in cost. Against this, however, might be set a reduction in general cost through the tendency of the artisans and labourers to put a little more speed in their work on account of the fact that employment was not so secure; and also a tendency to cut prices on the part of many builders, owing to the small amount of work coming out, and the consequent increased competition. Materials which were entirely of local production had fortunately not increased in price. It was doubtful, therefore, the report states whether the increase in prices of imported materials really meant any increase in the cost of the whole work to the owner of the building.

To several other matters of interest dealt with in this report attention will be given in a future issue. A report from the New Zealand master builders has also reached us, and a summary of it will appear in due course.

ELECTRICAL NOTES.

"Diffusa" Light Screens.

The visits of enemy aircraft and the consequent regulations regard to the reduction of light, has been responsible for what is practically a new industry, namely, the manufacture of obscuring devices of all kinds. Inhabitants of the metropolis very soon made the acquaintance of the cardboard advertising shades with which our omnibuses, trams, and trains were fitted. Makers of electric lamps were also not slow to take advantage of the demand for shades in shops, etc., and provided advertising shades of their own lamps free to all and sundry. Of course, these shades could not very well be employed with ignity by public authorities for street lamps, and so the barbarous method was adopted of painting the glass of the lantern or of the lamp itself. A screen named as above is now been introduced by Messrs. Falk, Stadelmann and Co., Ltd., which should meet all requirements in regard to ignity and efficiency, as well as police regulations. It consists of a series of conical metal rings, placed one above the other in curve fashion, and finished dead black. It is placed over the lamp cap and cuts off all upward rays and avoids the production of bright spots of light as caused by plain conical reflectors. The illumination is good below the horizontal and well diffused at all angles. No alteration to existing reflectors or lanterns is needed. It is claimed that the effect produced is much superior to that obtained by painting or shading the tops of the lamps. This device is the invention of Mr. J. W. Beauchamp, the manager of the West Ham electricity undertaking.

"Arora" Electric Fires.

This is the name of a new make of electric fires which is distinguished alike by low prices and interchangeability. They are manufactured by the Arora Co. of Loughborough, a firm which was formed last summer under interesting circumstances. Mr. F. S. Grogan, who has been known to the trade for many years as an indefatigable expert and advocate of electric heating and cooking, had certain patents pending, and combined his experience with the resources of the owner of a large engineering works and foundry at Loughborough. Thus arose the firm which is now turning out these fires, and hopes before long to increase the number of patterns and also to introduce its own cooking appliances. The present "Arora" fires consist of a frame-work of cast iron in two parts, the firebox and the front. The firebox is a complete standard unit which is interchangeable with any front of the three finishes, to which is attached by two bolts.

The elements are made of an extra-heavy section of wire which under ordinary circumstances could not glow, but actually does so at quite a low current density owing to a patented form of construction. The elements are mounted on fire-clay bars of exceptional strength, each fire consisting of two bars rated at 50 watts. The fire-box besides comprises two switches, two heavy terminals, and two yards of 70-36 s.w.g. flexible cord. The fire bars are also interchangeable at very low cost. The total weight of the "Arora" fires is 19 lb.

Premier Suction Cleaners.

A new form of this machine has been introduced by the Electric Suction Cleaner Company, which overcomes the difficulties of special connections by a length of flexible hose. The motor and fan are built specially and solely for a hose connection, and as the machine only weighs about 7 lb. it can be carried about quite easily or attached to a belt on the person. The user is therefore able to move about freely and to use one or both hands. A length of non-kinking flexible cord is provided, which is, of course, quite a trifling impediment compared with a length of hose, so that the user can go with the machine into all sorts of corners and up steps without any difficulty whatever. Everything connected with the machine is well thought out and neat. The belt plate to which the apparatus is fixed is flexible and sheathed with rubber, so that it is comfortable and yields to the movements of the body.

"Pointolite" Motor-Car Lamps.

We described recently this new Ediswan Tungsten Arc Lamp, which had been introduced provisionally for small projector work. Messrs. C. A. Vandervell have now adapted their projectors to take this lamp, and are supplying a 72 volt 6 ampere-hour accumulator which will provide current for four hours, starting resistance and the rest of the equipment. If a dynamo is available giving a suitable voltage, the lamp can of course be run from this. Two forms of lamps are provided, one with a large bulb for use in lense mirror projectors, and another with a smaller bulb for ordinary reflectors giving a less divergent beam. It is hoped that "Pointolite" lamps will soon be available for use on low voltage, so as to be used on the dual lighting system of motor-cars.



E.6301.

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H.M. Office of Works, etc.

February 28, 1916.

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THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, March 22, 1916.

Volume XLIII. No. 1107.



THATCHED HOUSES ON THE PARADE, LYME REGIS.

(From a pencil sketch by Harold Falkner.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

MARCH 22, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1107.

EDITORIAL.

IT is impossible not to feel a glow of gratification at the spontaneous expressions of loyalty to the Empire which the master-builders of Australia, New Zealand, Canada, and South Africa have placed on record at their meetings. Not that such assurances were necessary, our colonial kindred having gone far beyond words. We are all proud of their deeds of heroism in the field, and the builders in the Mother Country who are working so strenuously and suffering so uncomplainingly for the great cause of Right against Might acknowledge with heartfelt gratitude the splendid spirit of their brethren in the Colonies, as manifested, for example, in the first resolution passed at the annual meeting of the New Zealand Federated Builders and Contractors, which concludes with this fine expression of patriotism: "We record our unswerving determination to assist and support in every way the carrying on of the war until victory is accomplished, and are in full accord with the resolve of our nation's leaders that the sword shall not be sheathed until our enemies are compelled to sue for peace." In offering our New Zealand compatriots our most cordial acknowledgments, we need not assure them that they have expressed exactly the same spirit of determination and self-sacrifice that animates the home industry. At home, also, we have anticipated the exhortations of the New Zealand master builders' president "to do our utmost to answer the call of Empire."

* * * *

With the New Zealand report before us, attention may be appropriately directed to a few items of purely business or professional interest. A resolution was passed advising local builders' associations to request architects to secure permits from local bodies before calling for tenders. Speakers at the meeting complained, in effect, that tenders were often falsified because the data upon which they were based were subject to modification at the demand of local bodies, but, in the course of the discussion, it became evident that architects were generally acting in conformity with the resolution. At home, this difficulty seldom arises in any very acute degree, tenders being usually invited upon data that are fairly immune from any very considerable modification by local bodies. Nevertheless, that it is a point to be borne in mind is evident from the advice given in the new "Rivington," by Mr. Brook Kitchin, that an architect designing for a district whose by-laws are unfamiliar to him should promptly get into touch with the local clerk or surveyor, and that he should not leave it to the builder to submit the plans.

* * * *

Rather against the advice of its chairman, the New Zealand meeting resolved "That the Institute of Architects be asked to agree that tenders for all con-

tracts be opened in the presence of any builders who may be present when tenders close." One can imagine that if this became the established practice, it would afford much exercise in the gentle art of making enemies. Meek men would shrink from such a ordeal, which, however, would be seized upon as a great occasion by the "win, tie, or wrangle" contingent. Heated discussion might sometimes necessitate calling in the police as supplementary assessors. The affair would become too thrillingly personal, and we are not altogether clear as to the reasons for putting forward such a recommendation, nor can we conceive that the practice would serve any useful purpose. In this country, at all events, it is a matter in which the architect, or the public body, may be wholly trusted to select the most advantageous tender without the assistance (however disinterested) of rival contractors thirsting for a minutely analytical acquaintance with each other's business methods, and quite capable of proving to their own satisfaction that the highest tender is in reality the lowest, and *vice versa*. Contractors have been known to grumble at the publication of their names, and the amounts of their tenders when they have been wide of the mark; but that publication has its uses is generally recognised by contractors, who, as a rule, accept philosophically their position in the list as the fortune of war; and they never—or hardly ever—have the bad taste to quarrel with the decision.

* * * *

Shortage of labour, in consequence of so many men having joined the colours, is as critical a condition with New Zealand builders as it is with our own, and, by way of remedy, a resolution passed at the annual meeting of the New Zealand Federation recommended employers "to take as many apprentices as possible." Presumably there is, in New Zealand as in this country, an arbitrary limitation, by the trade unions, of the number of apprentices relatively to the number of journeymen; but that limit cannot have been generally reached, seeing that, according to one of the speakers at the meeting, the last census showed that in the building trade there was only one apprentice to every twenty journeymen. Probably, therefore, in spite of the reduction in the number of journeymen, the number of apprentices could be nearly doubled without breaking the rules. But it was mentioned that many employers refused to take apprentices, whom they considered a nuisance. These are precisely the home difficulties. Those employers who are perhaps overwilling to take apprentices are held in restriction, and there are many others at the opposite extreme, refusing to take any apprentices at all. One could almost wish that, to keep the balance level, the negative compulsion by the unions were matched with a positive compulsion by the employers' organisations; they might justly insist that, in the national interest, member

should make themselves responsible for a fairly proportionate number of apprentices. Otherwise, the dearth of skilled workmen will in the near future assume a very serious aspect indeed. Already a menace, it may soon become a calamity. We are very well aware that the matter is receiving the earnest attention of the National Federation, who will perhaps consider the point here raised.

A labour question of considerable importance has been raised at Bournemouth. Broadly speaking, it concerns the attitude of trade unions towards industry, and their influence on national efficiency. These organisations seem to prefer uniformity to advantage. At Bournemouth, the corporation men are never put upon short time, they have a fortnight's holiday each year, they receive sick-pay, half-wages are being paid to men on active service, and the corporation workers are receiving £3 5s. a year more than could be earned under the new trade union rules. And yet the local workers' organisation insist upon the rigorous application of those rules because the corporation men work until one o'clock on Saturdays instead of leaving off at noon as the union rules decree. No wonder that, in the course of debate, a councillor exclaimed, with disgust, "If their employees wanted the trade union rules and regulations, let them have them, and remove every other privilege the Council employees got now. Every man should be employed by the hour, should be clocked in and clocked out, have no sick pay, be subjected to an hour's notice, and not look upon his job as a life job." This simple solution of the difficulty was not adopted, the corporation refusing to apply the trade union rules. Against trade unions in the abstract, there is nothing to be said; but they seem to want humanising. Their pedantry, of which the Bournemouth case is quite typical, is appalling.

Under the heading "Architects and Aircraft," a correspondent of the "Birmingham Post" states, with a full measure of the reticence imposed upon us by individual prudence and Government admonition, that architects "are embodying in their designs for new constructions various devices suggested by the conditions introduced by aircraft development." This is vague enough to satisfy the Censor; but it conveys a hint that should not be lost on those architects who now have leisure for study and experiment. Walls, windows, and skylights, as the Birmingham writer serves, are suffering many indignities under the lighting—or, rather, the obscuring—regulations. This is especially the case with churches and public buildings, which all sorts of people have disfigured with all sorts of makeshift blinds. In future, the architect will design and devise in anticipation of aircraft contingencies; and his ingenuity in this respect will be by no means confined to ways and means of illumination. As we ventured to suggest years ago, the development of aerial navigation, hostile or pacific, necessitates a reconsideration of the methods of roof construction. Presently the air will be thick with aircraft, and possibly the roofs may have to be made correspondingly thick with concrete or asphalt; for the aviators will occasionally collide, and are more likely to drop something heavier than a quality of mercy or the gentle rain from heaven upon the place beneath." Every roof of every great building will be, in self-defence, so substantially constructed as to be a potential anti-aircraft-gun emplacement; and, raised above it on stanchions will be a steel adaptable either as a resilient bomb-diverter or as a soft receptacle for the falling flier.

Comment on the decision of the R.I.B.A. to hold elections this year seems almost superfluous. Surely

there can be no doubt whatever that the arrangement is wise. There are at least three good reasons for it: all contentious issues are (or should be) in abeyance, there is but a depleted and languid electorate, and any considerable change in the *personnel* of the council—always a possibility when the voting is casual and unrepresentative—is undesirable as tending to substitute, for men who may be presumed to have got a grip of the special business created by the War, others who are without experience in it, and who, before they could become equally proficient, would have to undergo the tedious novitiate which the sitting members have accomplished. Supposing—by a moderate effort of imagination—that the council are in close touch with Government Departments, change of faces and of minds, and unfamiliarity with the nuances, would be embarrassing on both sides. Here, then, is a case to which Abraham Lincoln's maxim applies—"Never swap horses when crossing a stream"—even though the stream seem sluggish.

BUILDING TERMS IN ENGLISH AND FRENCH.

BEFORE very long, and probably before the war is over, the rebuilding of the devastated areas in France and Belgium will proceed with intense energy. Enormous supplies of all kinds will be required, and it is naturally to Great Britain that our French-speaking Allies will turn, at the outset, for the building materials, machinery, and equipment necessary to reinstatement. Upon the manner in which this first aid is rendered by our manufacturers and traders—upon the quality and fitness of the supplies, upon price and terms of payment, upon promptness of delivery, and above all upon a studious endeavour to meet in every particular the special requirements of this new market—will depend our hold upon this fresh field for enterprise.

At the outset our manufacturers and traders are confronted with a peculiar aspect of the language difficulty. They at once discover that the knowledge of French which serves well enough for ordinary business correspondence will not suffice for the new circumstances. Hitherto, British builders' manufacturers and merchants have had but little intercourse with France and Belgium, and consequently the technical terminology relating to building is unfamiliar. Nor can it be obtained at all adequately from the ordinary French-English dictionaries. To meet this initial difficulty, Messrs. Technical Journals, Ltd., 27-29, Tothill Street, Westminster, have issued, price one shilling, "A Pocket-book Glossary of English-French Architectural and Building Technical Terms," which, while it does not pretend to be exhaustive, renders invaluable help by presenting, in the handy form of a pocket-book, a working list of technical words and phrases, in English and French, most commonly in use in the building and kindred industries. All the basic operations of building are included, while machinery, tools, equipment, and processes are represented by the terminology that is best calculated to meet immediate requirements. For example, a *beam engine* is machine à balancier; *grooving-plane*, couteau à rainner; *flushing cistern*, réservoir de chasse; a *hoist*, monte-charge; *pavement lights* are dallages lumineux; *working drawing* is dessin d'exécution, and so on.

Throughout the book, a blank page for additional entries in pen or pencil faces every printed page of the Glossary, so that the user may gradually develop the vocabulary in accordance with his own professional or business requirements. A short list of commercial and business terms is added; and it is hoped that this little book, appearing at an opportune moment to meet an urgent need, may have the good fortune to "do the State some service."

HERE AND THERE.

ALL the week we have had the attestation puzzle before us, but by the time these notes appear it seems likely that some definite indication of the lines on which the Government is going to seek a solution may be forthcoming; thereby enabling those of us who are attested to see a little more clearly into the future. In these columns I have more than once expressed my views as to what architects and others should be doing in the midst of War; I have had a word with those poor patriots who chose to be tinkering over drawings of Jacobean woodwork and A Palace by the Sea rather than take their places in the ranks; and it would be only a fitting extension for me now to put the case before the married architect of military age who still clings so tenaciously to his empty office. But the attitude of the recruiting sergeant would hardly become me. I will pass therefore to another aspect of the War.

* * * *

Of what America is doing in the way of manufacture we all have a good idea, and from those who have been across the Atlantic we know what an Eldorado this War is for the big businesses and works in the States. But as regards the general feelings of the American nation towards us we only get a very unconvincing impression from President Wilson's utterances and notes. Here, then, is a little intimate glimpse. It comes to me from a business man in Boston, an American, the head of a large publishing firm. I told him something of our own views of the War, by way of corrective to what may appear in the American newspapers under the subtle stimulus of Germans in the States, and this is what he says in reply: "Your letter has a ring in it, that thrills me. My God, but I am proud of the English and the French peoples, and so is everyone else I meet. We are all praying for you; many of us, in fact most of us, would be glad to be fighting side by side with you. You can't judge of the true American spirit by the utterances of our Government at Washington. I hope you won't have to go to the Front, but if you do I know that you will go as an Englishman should. God bless you all, and speed the day when victory shall crown your arms." What a contrast, this virile warm-hearted friendship, to the tone that runs through the policy of "too proud to fight." If this is the general feeling of the American people towards us, it is due to them, I think, to make the fact as widely known as possible, and that is why I draw such attention in these columns to a personal letter.

* * * *

From the American Continent, or at least from that portion which is Canada, comes also my second reference to the War. I find it in the most recent copy to hand of "The Contract Record and Engineering Review" of Toronto. We in this little island know something of the vagaries of internment, and most of us are still wondering why so many alien enemies in our midst are allowed to be outside the concentration camps. The Canadian writer is concerned with a similar issue. "Germany," he says, "fights to-day like a hungry, maddened jungle-beast thwarted of its prey and driven to bay. Can we Canadians, as sane beings, afford to take any chances? I don't say that any man of German blood in the employ of the Government at Ottawa is disloyal to Canada—I don't know. But I do say—it's possible. I do say that in the breasts of these men love of their native land would be only human. I do say that, with the very best of intentions, these men of German extraction are more likely to be the medium through which important military information might leak out. I do say that Germany's methods in the conduct of this war, in many directions, have led us to view with an irrepressible feeling of suspicion the

acts of even our closest friends who may have German blood in their veins. I am willing to admit that this feeling is often unjust; but Germany has willed it—*even as she willed the war.* The continuance of a man of German birth or close German connection in any position of trust in Canada is entirely indefensible. Remove them at once. Treat them with all courtesy. Pay their salaries if you will, reinstate them when we win the war, but now—remove them. Make it impossible for them to do us harm as if we believed them guilty of the desire. We are taking a chance when our life is at stake. It is a foolhardy chance because there is nothing to be gained. Remove them as a precautionary measure. I know that I express the sentiments of more than 99 per cent. of the people of Canada when I demand from our Government the instant removal of these men from office, the immediate institution of adequate protection of all our public buildings and works, and the immediate segregation of such small elements in our population as give indication of German sympathies and who, in so doing, may interfere with our recruiting or may hinder the progress of the war in the smallest measure whatsoever." The recent destruction of the Canadian Parliament House serves to indicate the possibilities. That fire, I believe, is supposed to have been due to the overheating of a stove. But it may very well have been the act of a German agent. And explosions in factories in America testify to the fact that lives are of no more concern than buildings when the German agent is at work. The writer I have quoted is therefore very right in what he urges.

* * * *

From these serious aspects of the War we may turn to a lighter side. I find it unsuspectingly in "Decorators' and Painters' Magazine." In the March issue there is a leader on that strange and repugnant specimen of humanity who has lately figured as a conscientious objector. I will not tamper with the text. It is too good to be curtailed in any way, and so I take the liberty of reprinting it in full, with acknowledgment to the author for thus adding to the gaiety of life at a time when there is so much to make us grave: "He has loomed up very largely in the public eye lately—this man who would refuse to protect his wife, daughter or sister from the unspeakable Hun. We do not like him, and even if forced to go we are afraid he would be of little use. We wish, however, we had a few conscientious objectors in the painting trade. We would gladly welcome a man who would conscientiously object to sending low-priced tenders, thus allowing not the slightest chance to his competitors. We want to meet a conscientious objector to using whiting and size instead of the water paint specified by the architect. We want to give the glad eye to the conscientious objector who will refuse to purchase a varnish composed principally of resin, in preference to the very best copal carriage varnish which in his tender he has agreed to use. We want to extend the glad hand to the conscientious objector who declines to give one or two coats of paint when he is paid for three or four. We would welcome even into the privacy of our own domestic life, a conscientious objector who will refuse to treat the hardworking commercial as a common hawker, and who never hesitates to treat that traveller in any other way than as a gentleman. And, above all, we would regard as more than a loving brother the conscientious objector who has a perfect horror of buying more than he really wants, and who will pay every month for goods received. Such men as these we would lead with undisguised pleasure into the ranks of the trades and would, if it were necessary, ask our friend Mr. W. Pearce to design a special medal for their sole use as an ornament, so that all men should revere them!"

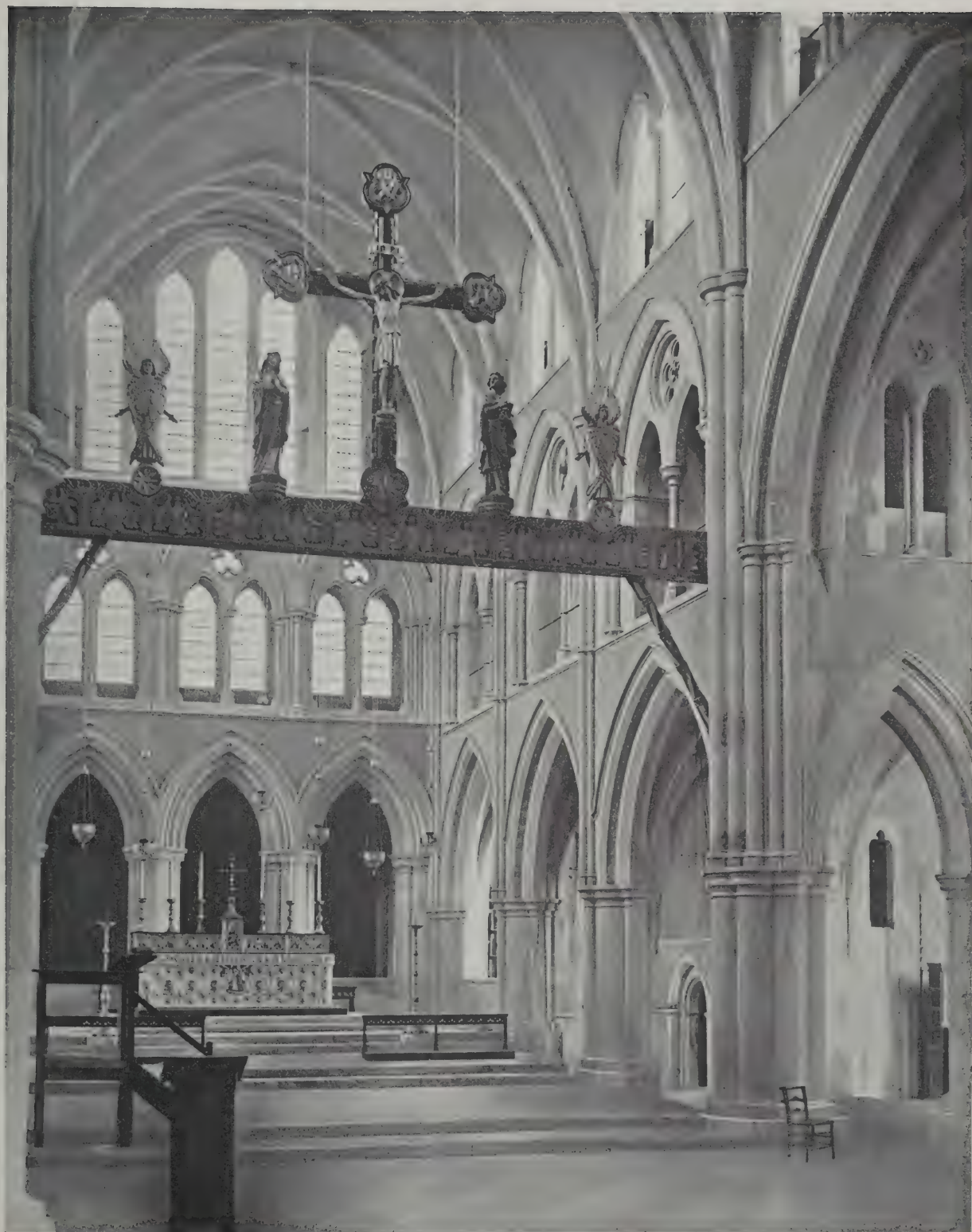
UBIQUE



SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.). XXVII.—THE PARAGON, BLACKHEATH, LONDON, S.E.



SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.). XXVIII.—THE PARAGON, BLACKHEATH, LONDON, S.E.: DETAIL OF WING.



CURRENT ARCHITECTURE (SERIES III.). XXV.—ST. WILFRID'S CHURCH, HARROGATE: EAST END.

TEMPLE MOORE, F.R.I.B.A., ARCHITECT.

THE PLATES.

The Paragon, Blackheath.

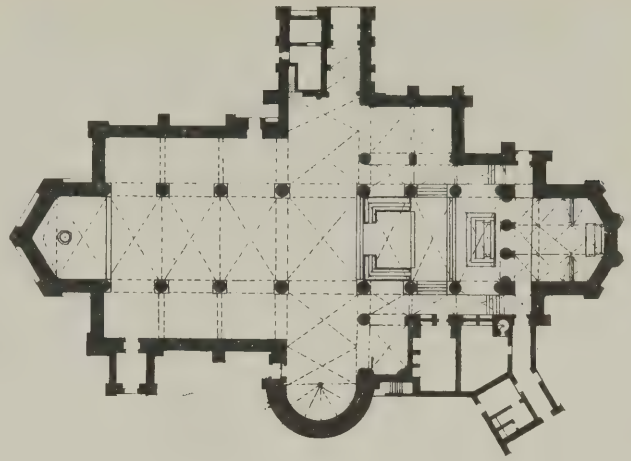
THE frontage of the Paragon at Blackheath follows the line of the outer walls of the grounds on which formerly stood the mansion built for Sir Godfrey Page. This house was pulled down in the latter years of the eighteenth century, when the present buildings were erected. Documents in the possession of the Cator Estate, to which this property belongs, suggest that an architect named Searle was responsible for the design; whether this was so or not, the work is evidently that of an accomplished artist with a good deal of creative force. The treatment of the different blocks linked up with the Doric arcades is most original, preserving as it does the continuity of the design, whilst indicating the individuality of the separate houses. The detail throughout, though delicate in execution, is extremely masculine and direct in character. The Paragon was originally built with the idea of providing accommodation for naval officers stationed at Greenwich, or for those who had retired from the Service.

St. Wilfrid's, Harrogate.

This church stands on an elevated site in Duchy Road, Harrogate. As will be seen from the plan on this page, the building is cruciform, with a low tower at the crossing. Externally it is faced with stone, and has tiled roofs. The church was consecrated in June, 1914, but is not complete at the present time, the eastern chapel and the ends of the north and south transepts having yet to be built. There is some fine stained-glass in the west windows, and such of the fittings and ornaments as are permanent are well worthy of notice. We published another view of the interior in our issue for February 23. This was incorrectly described as "looking east"; really it is looking west. The nave was built some time before the choir, and the altar was placed temporarily at the west end. It was this that deceived us when titling the plate. The choir and transepts were built by Messrs. Nicholson, of Leeds. The architect was Mr. Temple Moore, F.R.I.B.A., of London.

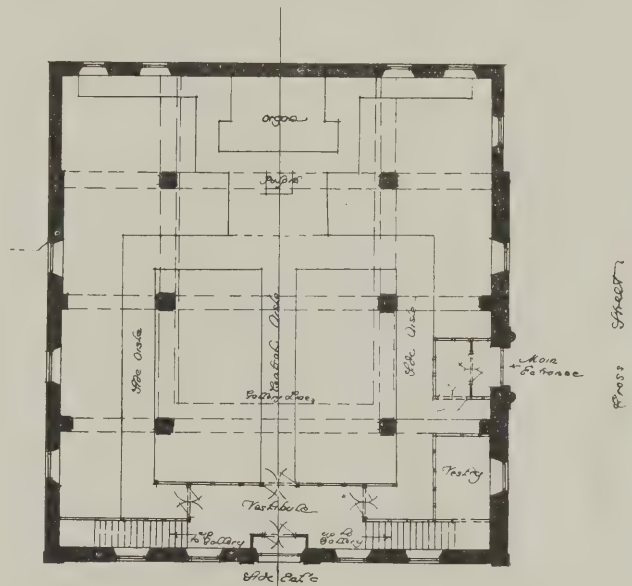
Cross Street Chapel, Manchester.

This William and Mary Chapel was erected in 1694, and its elevations, carried out in brick and stone, are typical of the style which is better known as "Queen Anne." Stone quoins are inserted into the angles of the front and side façades. All the ground-floor windows have segmental arches; the



ST. WILFRID'S CHURCH, HARROGATE.

TEMPLE MOORE, F.R.I.B.A., ARCHITECT.



The Floor

Chapel Walks

CROSS STREET CHAPEL, MANCHESTER.



CROSS STREET CHAPEL, MANCHESTER: SIDE ELEVATION. MEASURED AND DRAWN BY GORDON HEMM.

gallery windows are semi-circular, and on the front have stone architraves with key-stones. The Cross Street portal has two half-circular Doric columns, with enablature and a pediment, and rusticated masonry around the doorway. The side entrance is also rusticated; it has a square opening, above which is a well-designed cornice. It is interesting to note that the Rev. William Gaskell, the husband of Mrs. Elizabeth Gaskell, the famous novelist, commenced his ministry in this church in 1823.

Mirror at Sherborne House.

The phase of Louis XV. decoration which Chippendale developed is so exuberent that one has been rather in the mood to regard it askance. It did not keep within the orthodox bounds of straight architectural lines; it displayed an almost riotous exuberance. Nevertheless, in a more tolerant mood, one must admit that all virtue is not confined to a single manner of decoration, and if there be any truth in Hogarth's assertion that "curved in the line of beauty," then a mirror like this one at Sherborne House must possess merit. Its flowing lines are, indeed, full of grace, and though it may not be the type of enrichment for general use, it is admirable for certain situations—as in a drawing-room full of rich furniture. There is an element of sparkle and

gaiety about it which no amount of dignified criticism can kill.

The Theatre, Versailles.

The Theatre in the Palace of Versailles is not open to the public, and in view of that fact the beautiful engraving reproduced on our plate is especially interesting and valuable. The theatre was carried out in the reign of Louis XV., and displays the utmost amount of sumptuousness, but there is no suggestion of the tawdry in any part of it. The general scheme is conceived on a magnificent scale, and its details are worked out with great skill and grace. It was in this theatre that the historic scene of the cockade occurred, when Marie Antoinette gave her injudicious *fête* to the Gardes du Corps, after which event Louis XVI. was compelled to leave Versailles.

Great Hall, Kedleston.

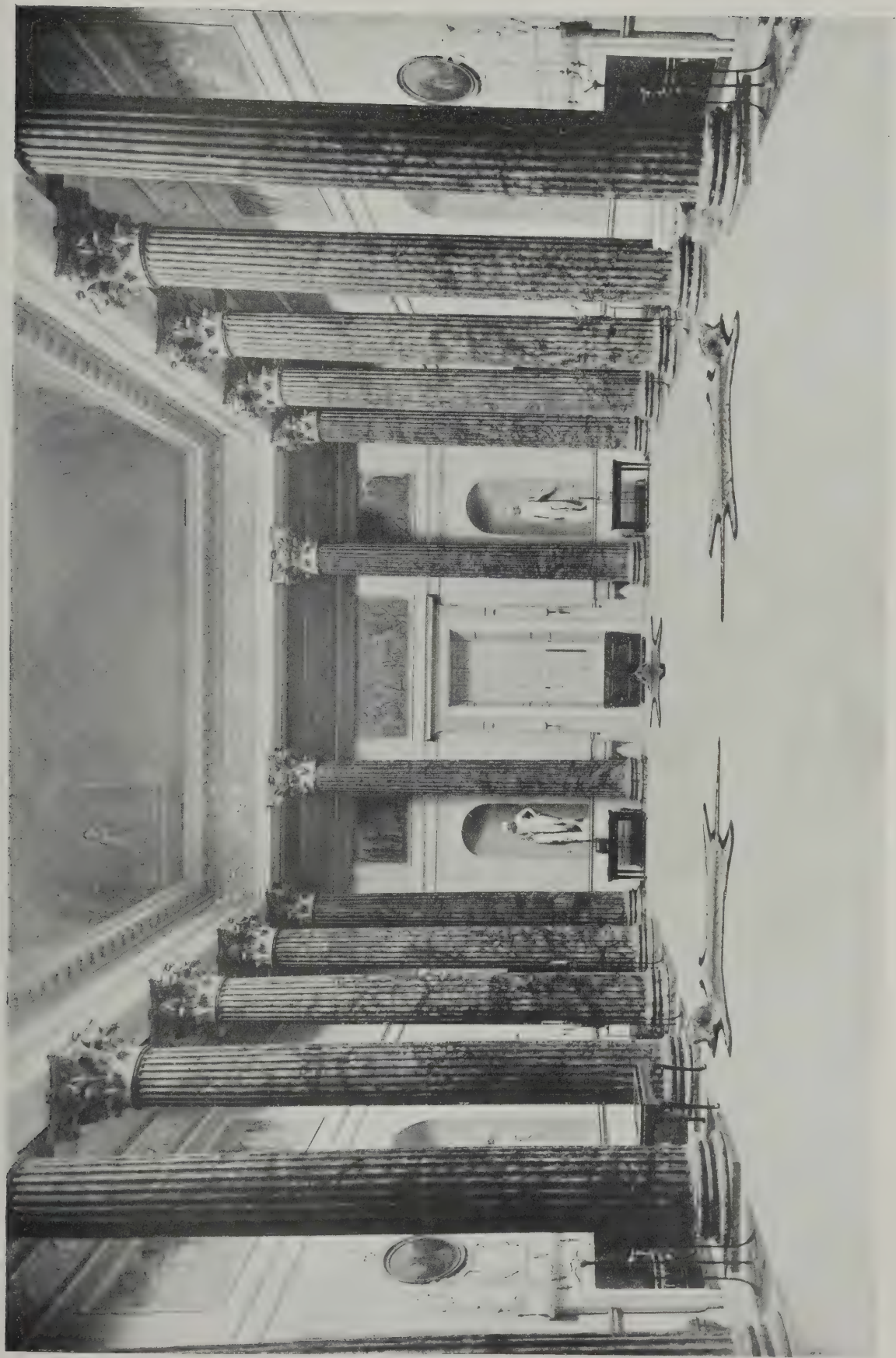
The Great Hall at Kedleston was built about 1766 from designs by Robert Adam. The stucco work of the ceiling is the work of George Richardson, 1774. It is a very striking apartment, theatrical in effect, and much of Adam's work was, but showing in its colonnades a scholarly treatment of the Corinthian order, and in the wall treatment a most complete incorporation of decorative painting, sculpture, and carved enrichment.



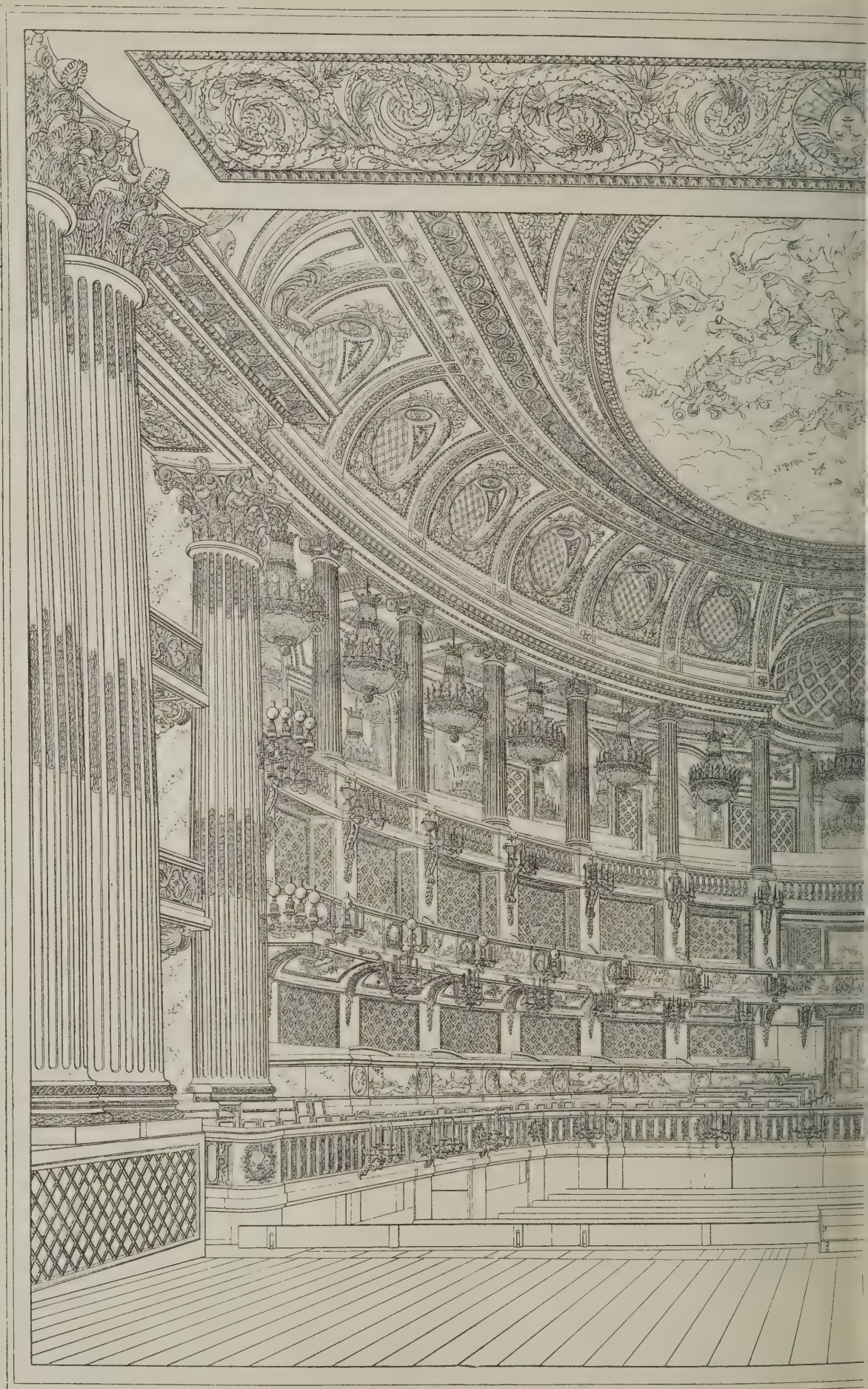
CROSS STREET CHAPEL, MANCHESTER.

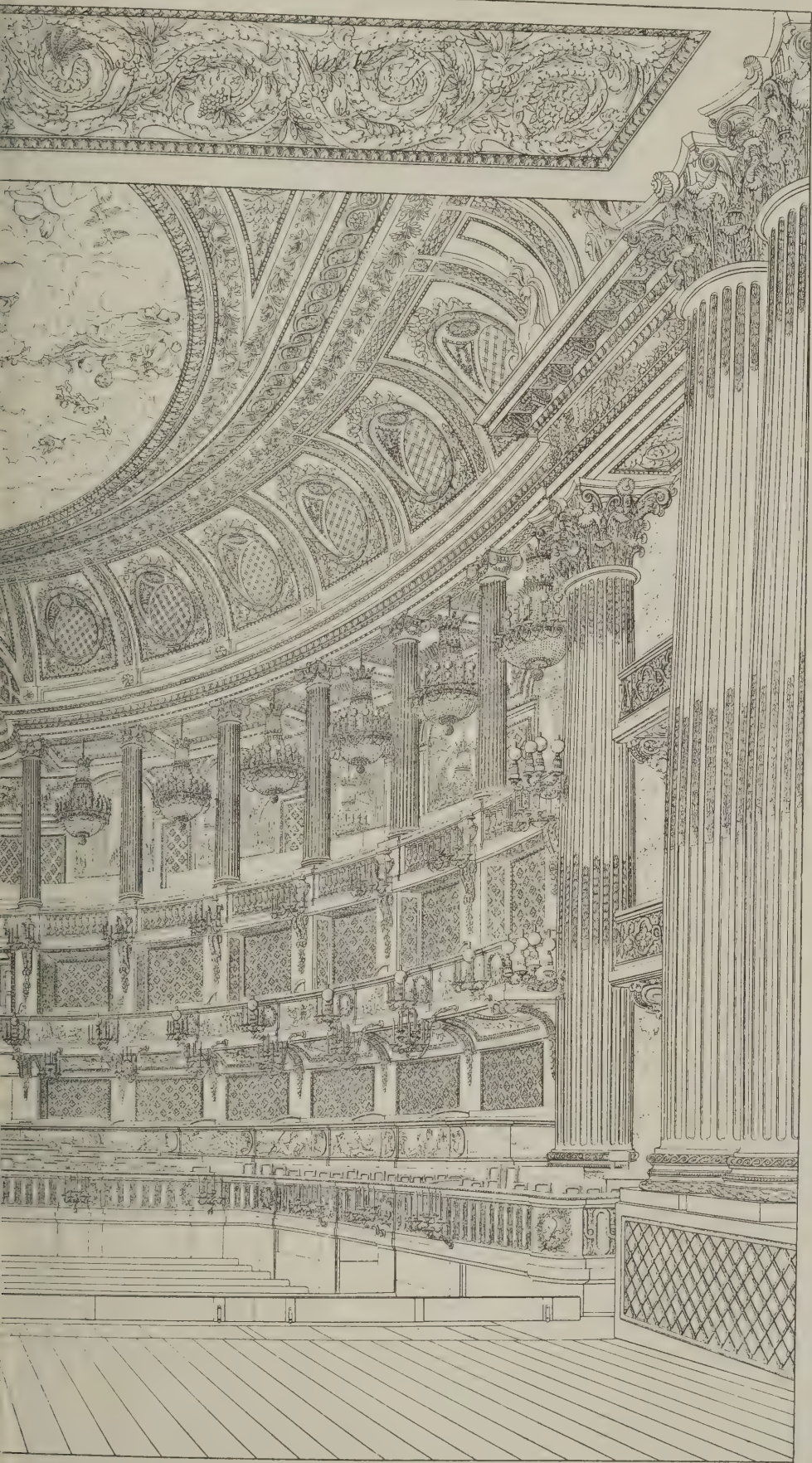


DETAILS OF CRAFTSMANSHIP (SERIES II.). IV.—ENRICHMENT AROUND MIRROR AT
SHERBORNE HOUSE, GLOUCESTERSHIRE.



ENGLISH INTERIORS. IV.—THE GREAT HALL, KEDLESTON, DERBY.
ROBERT ADAM, ARCHITECT.





THEATRE, VERSAILLES.

REVISED BUILDING BY-LAWS FOR WAR TIME.

THE following important report by a special committee appointed to consider the question of revising the building by-laws for cottage property has been approved by the Sheffield City Council:

In accordance with the promise given by the chairman of this Committee to Alderman Marsh in answer to a question at a recent council meeting, the committee have given consideration to the suggestion, having regard to the high price of building materials and the increased cost of labour, and with a view to encourage the building of cottage property in the city, the by-laws relating to new streets and building in force in the city should be reviewed with a view to the suspension or modification of the provisions and requirements therein contained or some of them.

The Committee have invited the Sheffield Society of Architects and Surveyors and the Master Builders' Association and the Corporation officials to report to them on the question, and they have received such reports and considered them, and recommend the Council to direct that the by-laws with respect to new streets and buildings be applied with the following variations, variations, and omissions for the period of the War, and for two years thereafter; and further, that before the expiration of such period the recommendations now made be further considered, and if on such reconsideration it appears desirable that the variations, variations or omissions now recommended any part thereof should become permanent, then the by-laws be revised so as to provide accordingly—

BY-LAW 22 (a) to be varied so as to permit (a) of a party wall erected between chimney breasts or jambs on each side of the wall and bonded thereto being not less than 8½ ins. in thickness of brickwork or the height of the lowest storey.

Note.—This by-law as affecting houses requires a thickness of not less than 13 ins. for the height of the first storey where the wall exceeds 30 ft. in length. The effect of the recommendation is that where chimney breasts or jambs are erected on each side of a wall, this thickness will be reduced to 8½ ins.]

(b) of the walls of an external w.c. being 4½ ins. in thickness in cement, provided the walls do not exceed 6 ft. in length and 9 ft. in height.

Note.—This (the same) by-law requires all external walls of w.c.s to be not less than 8½ ins. thick. The effect of the recommendation is to reduce the thickness to 4½ ins. if the wall is built of the length and height exposed with hard sound whole bricks set in Portland cement and properly bonded.]

BY-LAW 47.—The word "two" to be substituted for "three" in the fifth line.

Note.—This by-law relates to chimneys on roofs, and requires the chimney shaft to be 3 ft. above the roof. The effect of the recommendation is to reduce the height from 3 ft. to 2 ft.]

BY-LAW 56.—The word "quarter" to be substituted for "half" in the fifth line.

Note.—This by-law (*inter alia*) relates to laths to which roofing slates are to be nailed, and requires such laths to be ¾ in. thick. The effect of the recommendation is to reduce this thickness from ¾ in. to ½ in.]

BY-LAWS 57 and 58.—To be applied as if dwelling-houses were not affected thereby.

Note.—These by-laws relate to the requirement of certain sizes of timber for the construction of roofs and floors in all classes of buildings. The effect of the recommendation is that this requirement shall not apply to dwelling-houses, the sizes of timber used in dwelling-houses being left to the builder subject to the same being satisfactory.]

BY-LAW 72.—A skylight to be deemed a window in an attic bedroom.

[Note.—This by-law relates to the requirement of windows for light and ventilation being placed in the vertical walls of habitable rooms, and to comply with the by-law a vertical dormer window is required in an attic. The effect of the recommendation is to accept a skylight as a window in an attic, instead of insisting upon a vertical dormer window.]

BY-LAW 76 (c).—Add at the end of this sub-clause the words "or not less than 9 ft. in height over at least half the area of the floor, and not less than 6 ft. in height in any part."

[Note.—This by-law relates to the height of habitable rooms. The effect of the recommendation is to add an alternative for rooms on the first floor to the by-law requirement of an average height of not less than 8 ft. 6 ins. over the whole floor area.]

BY-LAW 90.—To be varied so as to omit the requirement of a window in an external w.c., provided sufficient light and ventilation be otherwise obtained.

[Note.—This by-law relates to the requirement of a window made equal to 2 sq. ft. to open for every w.c., and the effect of this recommendation is to omit this requirement in respect of an external w.c. if adequate light and air is otherwise obtained.]

The Committee desire to point out that they are advised that economies in the building of cottage property can be made in certain instances—

- (i.) By omitting cellars and substituting pantries and coal-houses on or near the ground floor level;
- (ii.) By the use of reinforced concrete walls in accordance with by-laws 25 (b);
- (iii.) By advantage being taken of by-law 76 (c) relating to the height of rooms, which permits rooms on the first floor to be 7 ft. 6 ins. at the eaves; and
- (iv.) By the use of asbestos tiles for roof covering instead of slates in accordance with by-law 55.

The Committee further recommend that the Water Committee be requested to reconsider their regulations requiring a ½ in. separate lead water service to be provided in the case of each house having a bath, as they are advised that this service pipe is sufficient for more than one house.

FOR MEN AT THE FRONT.

Special Subscription Offer.

AS everyone knows, our men at the Front are eager to read any kind of literature other than that relating to the War, and we are sure that the architects among the Forces abroad would be very glad if they could receive regularly a copy of this Journal, in order that they might keep in touch with what is going on at home in connection with the profession they have so patriotically relinquished in order to fight for their country. We ourselves are unable to get into touch with them, for the simple reason that we cannot ascertain the detailed indication of their regiments, but readers who are still at home and are in communication with them are in a position to meet the difficulty, and we therefore suggest to them that when writing to men with the Armies in France or elsewhere abroad they should enclose this announcement—that we are prepared to send out the Journal to men at the Front week by week for six months, for the special reduced subscription of 7s. 6d. post free.

All remittances and inquiries should be addressed to

The Publishers,
ARCHITECTS' AND BUILDERS' JOURNAL,
27-29, Tothill Street,
Westminster.

A GAS-FIRE CURE FOR SMOKY CHIMNEYS.

[SPECIALLY CONTRIBUTED.]

WHEN a chimney has given a great amount of trouble with coal fires in use, it is not an uncommon thing for the occupant of the house or the builder to suggest as a remedy the installation of a gas fire. This remedy frequently proves more or less successful, but it is not always understood why this is so, neither is it always realised that it is asking rather too much of a gas fire that it should prove a brilliant success where a coal fire has altogether failed, unless some special measures suitable to the gas fire are adopted.

The points in favour of a gas fire giving at least somewhat better satisfaction than a coal fire which has been in use in the case of a smoky, sluggish, or down-draught chimney, are as follows: First, the gas fire does not produce products of combustion in such great volume as a coal fire. Therefore, the chimney flue has not such a quantity of products of combustion to deal with. Secondly, the products of combustion from a gas fire are lighter and of less density than those from a coal fire, whose products of combustion are heavily saturated with sulphur and partially consumed coal in the form of thick smoke containing tar, etc. The products of combustion of a gas fire are therefore inclined to ascend the chimney flue more readily than smoke. Thirdly, if some of the products of combustion from a gas fire enter the room, the effect is scarcely noticeable, but it does not require the presence of much smoke from a coal fire before the occupants become unpleasantly aware of the fact. Their eyes and throats suffer, and the room and its contents are subjected to the rapidly soiling effects of falling blacks; curtains, furniture covers, etc., especially suffering from this. Fourthly, if a gas fire is properly regulated, and the gas is being perfectly consumed, a proportion of the products of combustion occasionally blowing back into a room are not in the least harmful, and unless they can be smelt are probably unnoticed.

The above-mentioned points explain the reason why a gas fire occasionally takes the place of a coal fire when the chimney has been smoking, and gives more or less satisfaction without special measures being taken. It is far more satisfactory, however, in such cases to take special measures in order to insure that no products of gas consumption (or, perhaps, very infrequent puffs of them) enter the room at all. A few of these special methods are explained below.

It may safely be stated that, given a skilled gas engineer and skilled workmen to carry out his suggestions, there is hardly any smoky chimney to which a modern gas fire cannot satisfactorily be fixed.

To begin with, there stands out the fact, as said before, that a gas fire does not deliver such a large quantity of products of combustion as a coal fire, simply because gas may be spoken of as the purified essence of coal. That is to say, the greater part of the heavy contents of the coal has been removed at the gasworks. The products of gas consumption being smaller in quantity and less in density, it is quite easily realised that they do not require such a large flue to carry them away. Therein lies the secret of satisfactorily attaching a gas fire to a sluggish or down-draught chimney that has given trouble by smoking: reduce the chimney area.

It is, of course, not easy to reduce the chimney area for its whole length from the

fireplace to the chimney pot, though this has been done in special cases (usually short chimneys) by closing the chimney pot with a cap, and dropping the gas fire flue through this from the roof downwards, bolted together in 2-ft. lengths, and lowering it until the throat is reached, when it is manipulated and joined up to the outlet flue from the gas fire.

It stands to reason that the volume and power of a downdraught is lessened if the opening down which it can blow is reduced, and also that the ascending power of the gas products of combustion is increased, if they have a narrow (but not too narrow to carry their volume) and circular or oval iron pipe up which to travel, instead of a wide, cold brick flue. Such a pipe is readily warmed by them, and this warmth in turn induces and increases the power of the upward movement, which is essential to defeat the attempted downward movement of the downdraught, or to counteract the lack of draught in a sluggish chimney.

It is not frequently necessary, however, to proceed to such drastic measures, as one

of the following methods usually suffice. In order to reduce the chimney area at base (the fireplace) and, as far as possible, to induce an upward current, it is usual first to cover in the whole of the firegrate with sheet iron, asbestone, or some similar fireproof material, which can subsequently be painted to suit the surrounding decorations, or to suit the finish of the gas fire, which is fitted tight back to it. The covering to the firegrate has an opening made in it of a suitable size to take the fluepipe from the gas fire, which fluepipe is then extended as far as possible in the upward direction, in order to increase the pull on the gas fire as much as possible.

What has now been accomplished is that the only channel through which the down-draught can come into the room is the gas fire flue, as all other outlets are closed, and this opening, while quite sufficient to carry away the gas products and to assist in ventilating the room, is probably more than from 16 to 40 square inches area, according to the size of the gas fire. When the gas fire is lighted the fluepipe, say 4 ft. or more in height, rapidly gets hot, and an upward current is accordingly induced, sufficient in many cases to cure a sluggish chimney, or slight downdraught.

If this remedy does not prove successful, we must carry matters further. We have reduced the chimney area at the bottom, but have left the rest of the chimney at full area. We must also deal with the other end. We proceed, therefore, to attack the roof end in the following manner. We will suppose the circular or oval fluepipe on the gas fire below is 4 in. diameter, or of equal area to a 4-in. circular flue; that is all that is necessary at the top also, and we must therefore reduce the chimney pot—say an 8 or 10-in. one to 4 in., and this is usually accomplished in the following manner. A cap is made to go right over the chimney pot, and is strapped to it. This cap has some 4-in. fluepipe passed through and fixed to it, and is arranged so that about 2 ft. of the 4-in. fluepipe project above the top of the pot, and, say, 2 to 4 ft., with soldered or bolted joints, below it.

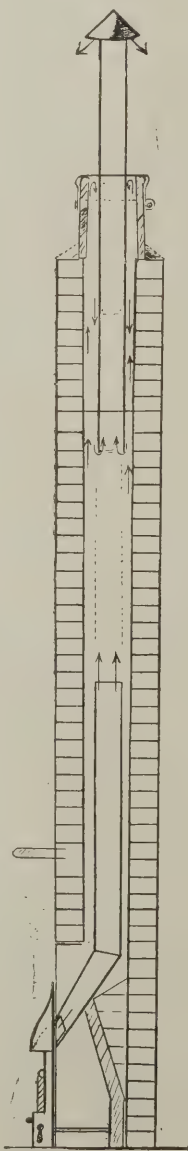
When the apparatus is fixed over the pot there is, therefore, some 4-in. fluepipe projecting downwards towards the 4 ft., as much as possible, of 4-in. fluepipe from the gas fire, which is projecting upwards.

The area of the chimney flue—that is, the inlet to the down-draught, is now checked top and bottom. The heated products of combustion pass up the lower flue, and, when they reach the chimney pot, first collect in the pocket under the cap, which closes the chimney pot, but as soon as the upper fluepipe and cap get hot the necessary upward movement takes place.

A plain cone is usually fixed on the top of the fluepipe arising from the top of the cap over the chimney pot, but, in very bad cases, a cowl is of great value.

A very large number of chimneys which were sluggish, or were subject to down-draughts of varying intensity, have been successfully dealt with by fixing gas fire coupled with one or other of the methods recommended herein. It must not be taken for granted, however, that any case of downdraught or sluggishness in a chimney can be cured by any particular one of these methods, as there are many causes of such troubles that each individual case should be dealt with on its merits.

The method of treatment is illustrated by the accompanying diagram.



BOOK NOTICE.

The New "Rivington."

In his preface to the new edition of *Rivington's Notes on Building Construction*, Mr. Reginald Blomfield recalls that the first edition was published in 1875, and then he adds that "there must be many architects still living who look back to that work with gratitude and esteem as their introduction to the rudiments of building," he does no more than justice to a work that has fulfilled its purpose in an eminent degree. Six successive revisions kept it fairly well abreast of the movement, but at length there arose the necessity for more drastic treatment, and, under the editorship of Mr. W. Noble Trelvetrees, the work has been entirely rewritten.

There are three main points of view from which a manual of building construction may be written. It may lay stress on the requirements of the practising architect, or on those of the architectural student preparing for examinations, or on those of the craftsman. In each case the matter will be identical in substance, but the treatment will be influenced by the purpose—in scale and proportion, or in method of presentation, the information will differ for each case. Originally, *Rivington's Notes* were produced for the assistance of students preparing for the South Kensington examinations. They embodied a mass of data which the practising architect was glad to consult as occasion arose, but he would have preferred fuller discussion of principles; while the student, for his part, would have been better pleased with more rigorous conciseness, and the young craftsman who wanted instruction in the best way of forming a detail or wiping a joint must have felt that the book was wanting in technical detail.

To satisfy all these demands, nothing short of an encyclopædia of architecture and building construction would serve, and the merit of comprehensiveness would be subject to the huge drawbacks of extreme unwieldiness and prohibitive cost. At any less heroic attempt to combine these several interests is foredoomed to partial failure at least.

We are far from suggesting that the new edition of *Rivington* is in any sense a failure, but that it should suffer to some extent from the necessity for compression is inevitable. Due amplification of the many subjects that now demand inclusion in a complete work on building construction being impossible, a bibliography of the separate treatises in which to look for further information might have been desirable, if only one could feel confident that such works were in most instances up to date.

Theorising apart, and taking the work as it stands, it must be admitted that the editor has got together a most competent set of contributors. Mr. Brook Kitchen, F.R.I.B.A., summarises, in the first chapter, the ordinary legal enactments affecting building operations in London and in the provinces, and he offers the very wise advice that the architect should ascertain from the surveyor or clerk to the local council what regulations are in force in any district with which he (the architect) is not already familiar; and that the submission of plans for approval should not always be left entirely in the hands of the builder, as "a preliminary interview by the architect with the surveyor or clerk to the local council will frequently obviate or remove misunderstandings which might otherwise arise." This, though the simplest, is by no means the least impor-

tant chapter in the book. "Sites and Foundations" are dealt with by Mr. H. V. Lanchester, F.R.I.B.A. In the hands of Professor C. H. Reilly, M.A., F.R.I.B.A., and Mr. Patrick Abercrombie, M.A., A.R.I.B.A., the subject of "Timbering Excavations, Shoring, and Underpinning," assumes unwonted interest, since it is so seldom treated with any regard for literary style. This chapter is actually readable, and what is more, it rationalises operations that other writers have been content to enumerate. This chapter, and that on "Scaffolding," by the editor (who appends useful notes on the legislation affecting the subject), are copiously illustrated. In Chapter V. Mr. Alfred W. S. Cross, M.A., F.R.I.B.A., writes on "Centres and Moulds" generally, and the editor adds an account of "Moulds and Centring for Concrete." Mr. Cross contributes also a very instructive chapter on "Arches, Vaulting, and Domes." Professor Beresford Pite on brickwork and Mr. W. D. Caröe on masonry invest those subjects with an interest to which they can seldom pretend as commonly dealt with from the workmen's point of view. This observation, indeed, holds good for the rest of the work, which is remarkably free from the deadly dullness that infests most technical manuals. Chapters on "Iron and Steel Work," and on "Steel Skeleton Buildings," are contributed by Mr. E. Fiander Etchells, and are followed by two dealing respectively with "Reinforced Concrete" and "Fire-Resisting Construction," by the editor. "Carpentry," by Mr. W. T. Sweett, forms the longest chapter in the work, and it does not include wood partitions, which are treated separately by Mr. Alan E. Munby, M.A., F.R.I.B.A., who, of course, describes other kinds also.

The second volume is occupied as regards one half with subjects that may be said to relate more or less directly to building construction, such as roofs and roofing (steel and timber), windows and glazing, stairs and staircases: the remainder of the volume being devoted to plastering; painting, decorating, and paperhanging; drainage and sewage disposal; water supply, plumbing, and sanitation; sanitary fittings; heating, ventilation, and hot-water supply; gas and electric lighting; gas-fitting and electric light installation; electric bells, telephones, and lightning conductors; and fire equipment. That so many of the more essentially practical subjects are dealt with by architects (who in several instances are also qualified civil, electrical, or mechanical engineers) is a healthy sign—not merely for the book, but for the profession of architecture. It shows that architects are keeping in step with the great forward movement that has taken place in recent years in what may conveniently be called the science of building. Of the 484 illustrations contained in the first volume, and the 395 in the second, most are new, and as a rule they are admirably clear and helpful. They show a rather interesting variation in the lettering, most of which, while neat and legible, lacks the distinction of the architectural penwork of which a few instances occur.

On the whole the new *Rivington* is worthy of the reputation gained by the old, and no higher praise could be bestowed upon it. The editor is certainly to be congratulated on having brought so formidable a task to so successful a conclusion.

"*Rivington's Notes on Building Construction.*" A Book of Reference for Architects and Builders, and a Text-Book for Students. Parts I. and II. Edited by W. Noble Trelvetrees. New Edition, entirely rewritten. With 879 illustrations. Pages x + 306, and x + 332. Two Vols., price 7s. 6d. net each. Longmans, Green and Co., 30, Paternoster Row, London; Fourth Avenue and 30th Street, New York; Bombay, Calcutta, and Madras, 1915.

LEGAL.

An Architect's Claim.

Northcote v. Minister and Co., Ltd.

March 6. King's Bench Division. Before Mr. Justice Rowlatt.

This was an action by Mr. Arthur Edward Northcote, A.R.I.B.A., 19, Tot-hill Street, Westminster, against Messrs. Minister and Co., Ltd., Westminster, to recover £347 11s. 10d., balance of account for fees for professional work done for defendants, whose chief plea in defence was that an alleged warranty by the architect that rights of light and air vested in neighbouring owners should not be infringed had not been fulfilled. Defendants put forward a counterclaim for damages against Mr. Northcote and Mr. Nixon, who had acted as surveyor; one item being for £225, said to have been paid in settlement of certain claims by adjoining owners.

Mr. Gibbons, K.C., Mr. Brandon, and Mr. Head appeared for the plaintiff; Mr. Holman Gregory, K.C., and Mr. A. Neilson for Messrs. Minister and Co.; and Mr. Hollis Walker, K.C., and Mr. Woodgate for Mr. Nixon.

Mr. Gibbons said the claim was for the balance of an account for work done between March, 1913, and December, 1914. At the request of Mr. Nixon, who was acting for Messrs. Minister and Co., Mr. Northcote had prepared plans for the erection of premises in Poland Street, Westminster, and defendants had placed a contract for the erection of the buildings. Questions of the infringement of rights of light and air of adjoining owners had arisen, as, counsel contended, it was understood that they might arise, but he could not understand how any liability for them could attach to plaintiff.

Mr. Samuel Nixon stated, in the course of his evidence, that, from an early stage, the difficulties with regard to rights of light had been continually discussed.

Mr. Northcote, in his evidence, said that he had never guaranteed that there would be no question of light, or anything of the sort.

Mr. Bannister Fletcher, F.R.I.B.A., giving evidence in support of plaintiff's claim, said that defendant's building No. 56, Poland Street, would affect the light of the adjacent Roman Catholic schools, but not materially.

Mr. George Hubbard, F.R.I.B.A., who had been consulted by defendants while No. 56 was in course of erection, formed the opinion that unless the plans were modified there would be interference with the light of the schools.

Mr. W. C. Symes, Licentiate R.I.B.A., Mr. D. Watney, and Mr. Alfred W. S. Cross, F.R.I.B.A., were also examined as expert witnesses.

At this point his lordship said he felt a difficulty about the case as against Mr. Nixon. Mr. Gregory, in reply, submitted that Mr. Northcote and Mr. Nixon were jointly responsible; and thereupon Mr. Hollis Walker submitted that there was no case against Mr. Nixon.

Mr. Walker called, on behalf of Mr. Nixon, Mr. A. W. Rogers, and Mr. Frank Elgood, F.R.I.B.A., who took the view that the light of the schools would not be materially affected by No. 56; and Mr. Searles-Wood, F.R.I.B.A., thought that Mr. Northcote's plans would not interfere with the light of the schools.

On March 10, after hearing counsel, Mr. Justice Rowlatt gave judgment. Dealing first with the case of No. 56, he said that, allowing for the fact that the light was a lateral one, he thought the Roman Catholic schools would have obtained an

injunction for an infringement of their light. It was said that a new window might have been put in to get over the difficulty; but it was extremely difficult, when a man's light had been infringed, to go to him and say, "Have a different window." Strictly speaking, one could not call on a man to alter his building to diminish the injury one had caused to him, and one could not call upon schools, who had difficult people to deal with—officials whose minds could not be fathomed—to act in that sort of way. Therefore, he came to the conclusion that the school light was infringed, and it was reasonably probable that an injunction would have been granted if the matter had not been settled. He did not think a professional man was bound to be infallible—far from it—but he must be careful and diligent. He (the judge) could not take the view here that the architect's duties were limited by any conversation with Mr. Nixon or anybody in which he was told that these matters would be dealt with as they arose, and he was of opinion that the claim of Minister and Co. against Mr. Northcote in respect of No. 56 was made out. As regarded No. 55, the position was rather different, as everybody saw that there was a danger and difficulty about it, and various discussions arose from time to time, and he was satisfied that when the instructions were given to Mr. Northcote it was fully understood that openings were left for modification. What was intended and what was understood was that some little changes might have to be made to meet the punctilious or small claims on the part of the schools and possibly others. He had come to the conclusion that Minister and Co. also made good their case with regard to No. 55, and he thought they were justified in the course they took.

Subsequently his lordship went on to deal with the position of Mr. Nixon, and said he was satisfied that Minister and Co. could not sustain their case against Mr. Nixon on the grounds they alleged, that he was a partner in fact with Mr. Northcote. Therefore, so far as the case against Mr. Nixon was concerned, he gave judgment for Mr. Nixon, with costs. As between Mr. Northcote and Minister and Co., the accounts would have to be gone into to see what was due to each party.

Mr. Holman Gregory, K.C., suggested that Mr. Nixon was not entitled to his costs, as but for him Minister and Co. would not have engaged Mr. Northcote, who was a stranger to them, but his lordship would not interfere with his previous decision.

The accounts were then closely gone into, and it was announced that the sum for which Mr. Northcote was entitled to judgment for fees was £256 18s. 1d. (less £96 paid), and Minister and Co. were entitled to £375 6s. 2d. on their counter-claim.

Judgment was entered for the plaintiff for the sum mentioned and costs, except with reference to the issue of negligence as to which Minister and Co. would have the costs, and judgment was entered for Minister and Co. on the counter-claim for the sum stated, with costs. At the request of Mr. Holman Gregory, K.C., Mr. Justice Rowlatt declared that the issue at the trial had centred upon the allegation of negligence.

Mr. Gibbons, K.C., said that the whole question of the duties of an architect was involved here, and as in regard to No. 56 it was a very fine point, he asked for a stay, as it might be desired to take the opinion of another court.

This application was granted on the usual terms.

SOCIETIES AND INSTITUTIONS.

New Zealand Federated Builders and Contractors.

We have received an official report of the fifteenth and sixteenth annual meetings of the New Zealand Federation Builders and Contractors' Industrial Association of Employers, held at the New Zealand Employers' Federation Rooms, Wellington, New Zealand, under the presidency of Mr. N. Meuli, of Wanganui. It seems that no meeting had been held in 1914; hence the curious description of "fifteenth and sixteenth annual meetings."

In his opening speech, the President referred to the war, "which had been forced upon the nations by the aggressiveness of the German Empire, spurred on and persuaded by its military rulers, its teachers, professors, and philosophers. It behoved all British subjects," he said, "to do their utmost to answer the call of the Empire and it behoved members of the Association, as employers, to do all in their power to facilitate recruiting and offer every encouragement and inducement to young men to join the Army. He was pleased to say that builders had so far done their share, and hoped they would continue to do so until the end, however far off that would be. The effect of the war on the building trade had not, so far, been serious in New Zealand, although prices for materials had in some instances increased considerably."

The first resolution moved was as follows: "We, the representatives of the Master Builders of the Dominion of New Zealand, in Congress assembled, express our abiding loyalty to the King and respectful sympathy with him in the recent accident which has befallen him. We further express our gratification at the formation of a Dominion National Ministry at a time of stress, when it is the British nation's paramount task to overcome and master an arrogant foe. Of the glorious achievements of New Zealand's soldiers (who include a number of our sons) we are gratefully proud. We record our unswerving determination to assist and support in every way the carrying on of the war until victory is accomplished, and are in full accord with the resolve of our nation's leaders that the sword should not be sheathed until our enemies are compelled to sue for peace." This was carried with enthusiasm.

At the meeting it was resolved to advise local builders' associations to request the members of the local Institute of Architects to secure building and other permits from local bodies before calling for tenders; to ask the Institute of Architects to agree that tenders for all contracts be opened in the presence of any builders who may be present when tenders close; that efforts be made to secure provision in any new conditions of contract that the main contractor shall be supplied with copies of all signed contracts; and that when the general conditions are next being revised by architects and builders efforts be made to secure amendment of the maintenance clause to provide for notice being given in writing to the contractors during the maintenance period of any defects discovered. A resolution "that conference discuss the question of legislation to provide for the registration of master builders on similar lines to the registration of architects" was withdrawn after a discussion in which one of the points made was "that the only country in the world where builders were registered was Germany."

It was agreed to appoint an advisory officer to watch generally over the interests

of the Federation, to render advice and assistance to the various unions comprising it, to watch the various labour Bills that may come before Parliament, and to confer with the executive and take such immediate steps as may from time to time be deemed advisable; to study carefully the various awards pertaining to the building trade, and to point out any defects therein and to attend, as far as necessary, at sittings of conciliation councils and arbitration court, and to act as assessor or agent to bring about uniformity and secure desired amendments in awards; to visit various [employers'] unions from time to time, and to assist in securing the enrolment as members of local unions of those master builders who have not yet considered it their duty to join the Federation and generally to supervise and advise in all matters pertaining to the building trade. It was suggested that this officer should be paid £100 per annum as retaining fee and an additional guinea a day, with hotel and travelling expenses, for every day of absence from home on Federation business; but the proposal to raise the money by means of an annual levy of £1 per member was negatived, and it is not clear from the report how the expense is to be met.

Mr. Meuli was re-elected president and Mr. W. Grenfell secretary. The secretary's address is National Mutual Building, Custom House Quay, Wellington, N.Z.

Sydney Master Builders' Association.

Last week, on p. 116, we referred to the annual report of the Sydney, New South Wales, Master Builders' Association. Further extracts are here given.

Reference was made to the war, and the part played by the British Navy and the Australian fleet keeping the seas open to commerce, and also to the splendid work of the Australian soldiers on the field of battle. The report mentioned that two of the Association's members and many sons and brothers of other members had joined the colours. Of these some had already fallen on the field of honour, and sympathy went out to the bereaved members. Several members of the Exchange were also on active service, and the president of the Electrical Employers' Association (one of the latest affiliated associations) had resigned his position to answer the call of duty. Many tradesmen and labourers connected with the building trade and in various branches were nobly doing their share. The architectural profession had also provided from among its members many men and officers for the Expeditionary Forces, and builders were pleased to note that one of the members, for whom the highest esteem was felt, Major C. Rosenthal, had gained high distinction for his actions in the field. Master builders and those allied with them had already assisted the various patriotic and relief funds to the extent of over £14,000.

Referring to the question of day labour and State Socialism, the report says: "It appears that the State has simply imported a lot of engineers and supervisors from the other end of the world at high salaries, and has been called upon to find the money to finance the various undertakings just as it had continued along the lines of the old policy. Moreover, the State is paying 10 per cent.—or more—on the total cost for the privilege of doing so. The Government still continues its policy of extending State employment and State ownership into fresh fields of industrial enterprise. Having recently instituted a State bakery, the Government now proposes a State bread monopoly for the metropolitan district of Sydney."

REPAIRING DAMAGED STONEWORK.

From the Stone Preservation Co., Ltd., 12, North Mews, Gray's Inn, W.C., who are experts in restoring damaged or decayed stonework, we have received a leaflet entitled "Hints on Stonework," in which their system of repairing and preserving historical and modern stone buildings is described, and (2) a price-list and particulars of "Coatostone" liquid stone and "Coatostone" stuc, of which they are the proprietors and manufacturers. In the leaflet it is explained that the basis of the system of restoration or repair is the reconstitution of the natural stone, the material employed comprising the maximum percentage of natural stone, and a binding material that is not affected by the acids in the atmosphere, and being insoluble in water, cannot be washed out by rain. No cement or water is used in this reconstituted stone, and the firm have discovered a method of chemically amalgamating the reconstituted stone to the natural stone. This process is applicable to every kind of stonework, including monumental masonry and statuary. Any work can be matched.

A preservative solution, described as a transparent chemical fluid which does not alter the grain of the stone, which it penetrates and hardens, is also manufactured by the firm, who undertake the cleaning of all kinds of elevations, to which this fluid may be applied to give a weather-resisting surface. For "Coatostone" (liquid stone) it is claimed that, laid on with a brush, it gives the perfect effect of natural stone to plaster, cement, wood, or other surfaces. It is applied to imitate any of the well-known

building stones, or to any tint desired. "Coatostone stuc" is a composition applied in plastic form to brickwork or concrete, for the artistic treatment of halls, lobbies, staircases, corridors, etc. It can be cast, moulded, or carved to any design.

These specialities are in extensive use both at home and abroad, and the leaflet includes a long list of important buildings to which they have been applied.

THE MASTER BUILDERS' HANDBOOK AND DIARY.

This handbook is compiled on an excellent principle. It affords a complete view of the London building trade, showing not only its present position, but its past history from 1859 up to the present time. Recent transactions are set forth at considerable length, and include the latest half-yearly report of the London Master Builders' Association, as well as a valuable summary of proceedings of the Conciliation Boards during the past year. Another valuable feature is a carefully compiled summary of legal proceedings affecting building interests. These include not only the leading case of "Colls v. Home and Colonial Stores, Ltd.," but all the important actions that were tried in 1915. An authentic up-to-date list of names and addresses of members and associate members of the London Master Builders' Association forms in reality a directory of London builders and builders' merchants. Lists of officers of the association, and of the National Federation of Building Trades' Employers are appended, and portraits are given of the respective presidents of the L.M.B.A. and the Institute of Builders. Among the contents of more general interest and utility are the Agreed

Form of Contract and the Irish Form; the text of the National Agreement with Plasterers; rules for slating and tiling measurements; particulars of the offices, districts, and requirements of the Metropolitan Water Board; an up-to-date list of district surveyors; and lists of kindred institutions and their chief officers, and of the London Labour Exchanges with their telephone numbers; several pages of useful memoranda for builders and contractors, and a handy diary printed on good writing paper. Both the text and the advertisements are fully indexed, enabling the prompt discovery of every item in the book, of which the advertisements are by no means its least valuable feature.

"The Master Builders' Handbook and Diary, 1916." The Official Year Book of the London Master Builders' Association. A compendium of practical information for the Builder, Architect, Surveyor, and Builders' Merchant. London: Published for the Proprietors, The London Master Builders' Association, by Technical Journals, Ltd., 27-29, Tothill Street, Westminster. Price one shilling net.

Waterproofing Rough-Cast and Flat Roofs.

In order to ensure the permanent watertightness of the rough-casting and flat roofs of the kennels of the Royal (Dick) Veterinary College at Summerhall, Edinburgh, the powder Pudlo has been employed with good results.

Great Factory Schemes.

Sir G. Riddell, at a Rotary Club luncheon in London, last week, stated that £600,000,000 was being spent in Britain in building new factories and extension of old factories and equipment of these, the greater portion of this huge sum going towards automatic machinery. He suggested that they wanted three or four millions of skilled workers.

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PUBLISHER'S ANNOUNCEMENT.

THE question of the cost of Advertising is governed entirely by the circulation of a publication. The prices for small Advertisements enumerated below are framed upon the lowest possible basis in order to allow the use of the columns of the Journal for "Wants," &c., at a figure well within the reach of everyone.

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Appointments Wanted.

4 lines (about 28 words) 1s. 6d.; 3 insertions, 3s.

ARCHITECT and Surveyor's Junior Assistant (ineligible for the Army); tracing, colouring, surveying.—A. H., 43, George Street, Portman Square, W.

ARCHITECT and Clerk of Works seeks permanency; age 33; married; 18 years' experience; designing, details, quantities, estimating surveying, levelling, supervision; 9 years present position; excellent references.—Box 767.

ARCHITECTURAL Draughtsman is open to engagement or to receive commissions; interiors, perspectives, details; scale models interior or exterior.—Apply Box 745.

BRICKLAYER (elderly, good all round); fire work, kitcheners and stoves, tile hearths, roofs, etc.; moderate wages.—C. B., 7, Wedmore Gardens, Upper Holloway, N.

BUILDER'S General Foreman; age 37 years; carpenter and joiner by trade; good draughtsman and manager of men; good references, etc.; used to new or alterations, large or small; able to get work out at competitive prices; town or country; wages moderate.—Foreman, 1, Ratoum Gardens, Shepherd's Bush, W.

BUILDER'S Working Foreman; new or alterations; trade, carpenter; good reference.—Apply W. A., 165, North End Road, West Kensington, W.

CARPENTER'S Work (sub-contracts) wanted; just completed large contract; good references; distance no object.—B., 39, Albert Road, Walthamstow. 765

CLERK of Works, just finishing job, open to another engagement, or as General Foreman. Town or country. References given.—Address, Wm. Chas. Lee, 12, Somerset Road, West Ealing. 754

CLERK-DRAUGHTSMAN (41); country or suburbs; many years' experience builders and ironfounders; book-keeping, prime cost, wages, accounts, plans, details, usual routine; good references; salary 35s.—C., 134, Upper Kennington Lane, London, S.E.

COMPETENT Foreman of Painters and Decorators (Working or otherwise); accustomed to best West-end work as colourist and manager of men; life abstainer and able to furnish excellent references.—Foreman Decorator, 29, Bravington Road, Harrow Road, Paddington, W.

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GENERAL Foreman; Carpenter and Joiner by trade; good draughtsman and manager; abstainer; non-smoker; age 41 years; 15 years' experience of managing; new or alterations; town or N.W.—Box 766.

PAINTER (Working Foreman or otherwise); practical paperhanger and colourman; used to all kinds of decorating work; age 45; references.—Till, 6, Wallace Road, St. Paul's Road, Canonbury, N.

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THE Association of Builders' Foremen and Clerk of Works, 56, Old Bailey, E.C.—Experienced Foremen and Clerks of Works can be obtained by applying to the Secretary, Mr. J. W. Sawyer, 214, Clapham Road, S.W. Competent foremen and clerks of works are invited to join this Association.

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The object of the Professional Employment Committee is to provide temporary paid work for British architects who are entirely dependent upon their profession for their living, and whose present difficulties are due entirely to the war. Applications can only be considered from architects who are ineligible for military service and unable to obtain War work of a professional nature. Enquiries should be addressed to the Honorary Secretary of the Committee at 28, Bedford Square, London, W.C.

BUILDER'S Prime Cost Clerk, thoroughly competent and experienced, wanted by large firm in Manchester for duration of War. State wages and full particulars.—Box 763.

DRAUGHTSMEN wanted for aeroplane work; any man capable of adapting himself to above may apply; applications treated confidentially; write to your nearest Labour Exchange mentioning this paper and No. A1,619; no person on Government work will be engaged. 768

ESTIMATOR.—Fredk. Sage and Co., Ltd. (shop-fitters), 58, Gray's Inn-road, London, W.C., require the services of a reliable and experienced man; preferably one who has been employed by reputable firm of quantity surveyors; applications must be by letter (which will be treated in strict confidence) and should state full particulars of experience and salary required.

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BOOKS.—Books on Building Trades, Engineering, Educational, Literary, Technical, and all other subjects; second-hand at half prices; new books at discount prices; catalogue free; state wants; books sent on approval; books bought; best prices given.—W. and G. Foyle, 121-123, Charing Cross Road, London, W.C.

TO ARCHITECTS COMPETING.

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POLING boards, selected lengths and thicknesses, best quality and full measure, also scaffold boards, putlogs, scantlings, deals, batten and boards; lowest wharf prices.—C. H. Glover and Co., Ltd., Importers, Hatcham Saw Mills, Old Kent Road, S.E.

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The drawings may be seen, and copies of the specification and bill of quantities obtained, upon application to the undersigned at the COUNCIL'S OFFICES, Grange Road, Hayes End, Middlesex, on or after MARCH 15, 1916, upon deposit of five guineas, which sum will be returned upon receipt of a bona-fide Tender.

Sealed Tenders, upon the forms supplied, endorsed "Workmen's Dwellings," and addressed to the CLERK to the COUNCIL, must be delivered at the COUNCIL OFFICES on or before SATURDAY, APRIL 1, 1916.

The Council do not bind themselves to accept the lowest or any Tender.

DOUGLAS C. FIDLER,

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Mr. JAMES NEILL, F.S.I., Etc., Architect and Surveyor, Standard Buildings, Lee (Tel. 192.)

Note.—Before deciding upon any system of tuition an intending candidate is invited to communicate with Mr. Neill (who, in addition to many other qualifications, is a Medallist, Honoursman, Freeman, and Head of the Department of Building at the Leeds Technical School).

The 12 and 24 months' S.I. Courses commence April. Past successes include:—The Penfold Silver Medal, Building Prize, Driver Prize, and the Special Prize.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

EXAMINATIONS will be held on the following dates: The Intermediate on the 2nd, 5th, 6th, 8th, and 9th June, 1916. Applications must be sent on or before the 15th April.

The Final and Special Examination on the 23rd, 24th, 26th, 27th, 29th, and 30th June. Applications must be sent in on or before May 6th.

The Testimonials of Study, etc., with the necessary fees must accompany all applications, all which are to be addressed to the undersigned.

The above examinations will not be held in November this year.

IAN MACALISTER,

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On WEDNESDAY, MARCH 22, 1916, at Two o'clock precisely (without reserve): 55,000 White Deals, Battens, and Boards; 20,000 Hapara Deals, Battens, and Boards; 8,500 Hernosand Skellereta Deals, etc.; 4,500 various Swedish Tens and Boards; 130,000 Archangel Strips; Canadian Pine Deals, etc.; 1,500 Canadian Spruce Planks, etc.; 12,000 Canadian Birch Boards; 8 Floorings and Matched Boards; 2,500 Swedish Weatherboards; 103,000 feet Mouldings and Beams with Larch Deals, Silver Spruce, Pitch Pine Timber Slatings and Laths, 5,500 White Sea Deals, etc.; 20,000 Archangel Strips; 2,000 Swedish Deals and Scantlings; 2,000 Norwegian Battens, etc.; 5 Canadian Spruce and Pine Deals and Battens; 2 Quebec Birch Planks; 440 Clear Silver Spruce Planks, etc.; 20,000 Floorings and Matched Boards; 70 Loads Sawm Pitch Pine Timber; 55 Loads Timber Logs and Krabark Planks; with Red Pine Deals, Slatings, Laths, etc.

On WEDNESDAY, MARCH 22, 1916, at Two o'clock: 625 Logs Honduras Mahogany; 35 Logs Honduras Cedar; Northern Wood, of superior quality, medium to good sizes straight and sound, suitable for Veneer, Panel Board, Machine, Ship and Building, and all branches of the Cabinet and Building trades, per "Sargasso" and "Carl" at Bel 87 Logs African Mahogany, of excellent quality, large sizes, straight and sound, containing logs suitable for Panel Board and all branches of the Cabinet and Building Trades, per "Boulama" at Gr Bassam. 259 Logs African Mahogany; 150 Logs Gaboon Mahogany; of superior quality, medium to large sizes and straight, per "Bornu," etc.; Cape Lopez. 254 Logs Tabasco Mahogany, of balance of Cargo per "Alphonse" at Laguna. Logs Honduras Mahogany; 14 Logs African Mahogany; 70 Logs Trinidad Cedar; 18 Logs East Indian Satinwood; 84 Planks East India Walnutwood; 1 Planks American Ash; 50 Planks Swedish Ash; 1 Honduras Mahogany and Cedar Logends, etc.; 1 out Reserve; 17,214 Planks and Boards Mahogany; 43 Planks American Whitewood.

THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, March 29, 1916.

Volume XLIII. No. 1108.



A VIEW OF WHITEHALL, 1795, SHOWING WOLSEY'S TREASURY AND DOVER HOUSE.

THE ARCHITECTS' & BUILDERS' JOURNAL.

MARCH 29, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1108.

EDITORIAL.

THIRTY-SIX eminent men of science having issued a memorandum or manifesto on the neglect of science in this country, two-and-twenty professors at the Imperial College of Science and Technology have commended it to the notice of Lord Crewe, Chairman of the Governors of the College. As the college is directed by its charter to concentrate itself on "science in its application to industry, and to give the highest specialised instruction and provide the fullest equipment for the most advanced training and research" in various branches of science, these gentlemen think it right to call his lordship's attention "to the extreme importance of this question at the present crisis in our national history." Both memoranda afford very welcome evidence that at least one section of the community—the scientific—is awake to a great national need. That is something for which to be grateful, even while one feels that the form and spirit of the memorial of the thirty-six leave much to be desired. Its premises are unassailable. No one doubts that "we have suffered checks since the war began, due directly as well as indirectly to a lack of knowledge on the part of our legislators and administrative officials of what is called 'science' or 'physical science,'" and no one questions the statement that "in the whole history of British Governments there has been only one Cabinet Minister who was a trained professional man of science—the late Lord Playfair." Presumably the memorialists ascertained their facts before stating (unscientifically as to syntax) that "at Cambridge but four colleges are presided over by men of scientific training; at Oxford not one;" and that "of the thirty-five largest and best-known public schools thirty-four have classical men as headmasters."

Misgivings arise when the memorialists sketch a constructive policy. Their panacea is a Bill "directing the Civil Service Commissioners and Army Examination Board to give a preponderating—or at least an equal—share of marks in the competitive examinations to natural science subjects." From this slight readjustment of the value of the mark, all educational blessings are to flow. "Science would rise in our schools to a proper position, and gain the respect necessary for the national welfare. A popular appreciation and understanding of science would begin to develop: and our officials of all kinds, no less than members of Parliament, would come to be as much ashamed of ignorance of the commonplaces of science as they would now be if found guilty of bad spelling and arithmetic." ("Guilty of arithmetic"!)" Eventually the Board of Trade would be replaced [!] by a Ministry of Science, Commerce and Industry, in full touch with the scientific

knowledge of the moment. Public opinion would compel the inclusion of great scientific discovery and inventors as a matter of course in the Privy Council, and their occupation in the service of the State." It is a beautifully simple solution of a problem that one had thought to be too complex to be settled offhand in the manner of the old lady who gave the cat milk. This simple act (it will be remembered by those whose scientific education has not been neglected) setting up a train of events culminating in the desired result.

Our memorialists' very ingenuous assumption that if only the cat gets milk, scientific progress will follow automatically, would carry more conviction if it smacked less of sectional interest. One critic has not hesitated to say that "the signatories ask for too little and too much. It is," he declares, "at once ludicrous and distressing to find that the solid result of the new propaganda is to be some petty tinkering with Civil Service marks." That is only too true, and the document has had the natural untoward effect of arousing the fierce opposition of the "classical side." In fact, the controversy which filled three pages in "The Times' Educational Supplement" degenerated into a wrangle among schoolmasters, which is about the worst that could have befallen it. Education does not exist primarily for the benefit of schoolmasters, more than science exists mainly for the benefit of professors of science; and the misfortune is that the memorial, and the squabble over it, should be taken to flout this truism. Consciousness of the—let us call it—misapprehension their memorial was likely to create must have dictated its closing passage: "Our desire is to draw attention to this matter in the interests of existing men of science, but to a reform which is vital to the continued existence of this country as a Great Power." This disclaimer comes much too late. It should have been made at the beginning of the text of the sermon.

One thing the memorial makes only too clear: the hopelessness of looking to professional men of science for a satisfactory solution of the vital problem at which it "tinkers." From the discussion it has excited there arises the equally inevitable conclusion that for educational reform we may not safely put our trust in schoolmasters. Very few of these pundits seem to shake themselves free from the fetters of petty professionalism. It is too much to expect of them that they should have that ability, and for that reason it behoves publicists to listen to the

with patience and expectancy—to sift their evidence and separate the ore from the dross. They are to be examined and cross-examined as expert witnesses, not to be set in the seat of judgment. Art, commerce, and industry, as well as science, education, and the humanities, must all come up for revaluation before properly constituted tribunals, which will want all the expert advice they can get from all sources, and in this respect the architectural profession and the building industries will not fail them. Already the Royal Society has held a conference, to which twenty-three learned societies have sent delegates, to consider the organisation of scientific effort, and this conference has recommended the formation of a Joint Board of Scientific Societies to promote the application of science to industry and the national services; and a committee on shipping appointed by the Government last week may possibly be the forerunner of many similar endeavours to ascertain the data essential for the reorganisation of all the resources of the Empire upon more scientific and more economical lines.

For these inquiries and this reorganisation, all sections of the community should hold themselves in readiness, for the "groups" may be called up at short notice. In the United States, professional men have taken time by the forelock. They are assembling in thousands to hear lectures on how to get fit for the service of their country in case it should be involved in the war. In our own country, more direct application of professional skill has been made by employing it in munition work, or by adapting it to the needs of the various services. Architects, and civil engineers, and builders of all denominations, are, indeed, doing splendid practical work; but those who are disqualified for active service may profitably devote themselves, individually and collectively, to careful preparation for the part they will be called upon to play in the second part of the great war," in which we must succeed or perish—the war in which the degree of professional, industrial, and commercial efficiency to which we attain will determine our place among the nations. If we continually recur to this theme, and treat it on broad general lines rather than from the merely sectional point of view, it is because we feel it to be a patriotic duty to do what we can to promote the wider outlook, to avert the dangers of drifting into mined areas, to confute the charge of narrow self-interest from which men of science and public schoolmasters have now to clear themselves, and to repudiate the condemnation recently levelled against business men that "the war has taught them nothing." It shall not be our fault if these charges are brought home to the profession and industry we have the honour to represent.

A writer in "The Queen, the Ladies' Newspaper," suggests still further extensions of woman's sphere of labour. Some enterprising ladies, we are told, have recently started, in the West End of London, a house-agents' business, and our contemporary comments that "When one thinks that it is women who have the management and government of houses, it is really rather extraordinary that the letting of houses should have been for so long an exclusively masculine occupation." For aught we know, it may be a matter of mere use and wont; or, on the other hand, there may be some obscure psychological reason for it; but, anyhow, it does not concern us so much as the suggestion that in the profession of architecture, even more than in house-letting, women should surely find scope." Our contemporary seems to be unaware that, in this country as well as in America, ladies have qualified for the

profession, and are practising it. There is, perhaps some small kernel of truth in the statements that "there are endless details about the planning of a house of which only a woman can appreciate the importance," and that every woman can see in every house in which she lives "a score of ways in which it might have been improved from the housekeeping standpoint—in such matters, for instance, as cupboards, passages, stairs, the height at which shelves are put, and so on." But there would be equal truth in the retort that as in most of these details the architect is careful to consult the ladies, it follows, as a broad inference, that if and where he is wrong he has been by them wrongly instructed.

Possibly he is at a disadvantage, as compared with a lady architect, in accepting too easily the advice of the lady client, or the client's lady; who, indeed, generally speaking, has rather less acquaintance with the matter than the architect himself has derived from perseverance in the attempt to generalise upon the very various views of different ladies, or—let it be whispered—occasionally upon the same lady's infinite variety. Only in rare instances does the lady of the house, who keeps servants, justify the claim for her (always made by lady journalists) of intimate, delicate, and sensitive feeling for the nice adjustment of cupboards and shelves; and we humbly suggest that her perennial grievance against the male architect is merely the badinage of so-called "eternal sex antagonism." Man also, it seems to be conveniently forgotten, is quite commonly a house-dweller; and, when he happens also to be an architect, he may be trusted to have formed rather more practical notions of domestic planning than the lady of the house can be expected to glean from the complaints of her servants. There can be, of course, no reasonable objection to ladies entering upon the somewhat arduous course of training involved in qualifying as architects, although the suggestion is at present untimely. Munition work, nursing, market-gardening, and a score of other occupations, have a much greater immediate claim upon women than a profession that, for the moment, is in no very urgent need of recruits.

Last week, in commenting upon the new conditions created by aviation developments, we happened to throw out the half-humorous suggestion of a steel roof-net, "adaptable either as a resilient bomb-diverter, or as a soft receptacle for the falling flier." A correspondent reminds us that the idea is by no means new (we did not claim for it the merit of an innovation), and has been put in practice in several instances that fear of the susceptibilities of the censor forbids us to specify. It is permissible, however, to cite an example of old standing, as it refers to a net that was put up long before Mr. Spencer made, eight or nine years ago, his plucky but vain attempt to circumnavigate the dome of St. Paul's in a dirigible air-ship. This adventure demonstrated very forcibly, and for the first time in London, the possibilities that have since materialised in visits from Zeppelins. Any architect who wants to see how a building would look when crowned with netting can get a fair idea of the spectacle by taking observation of the roof playground of St. Paul's Choir School in Carter Lane, behind Ludgate Hill; and if the visit is timed at a lucky hour he will find there "our young barbarians all at play," testing severely the strength of the nets by vigorous propulsion of the particular kind of ball that happens to be in season. There is so little doubt about the nets being ball-proof, that one would not be greatly astonished to find that they are also bomb-proof.

HERE AND THERE.

THOUGH pressure of work makes it quite impossible for me to write at length this week, the yawning columns take no cognisance of the limits of the human machine; they insist on receiving their quota of type. The Australian mail, however, solves the difficulty, by bringing me a gift from the gods in the form of "Building." In this I find an article on "Modern Towers of Babel," which happens to be of just the sort of character that is suitable for my own columns, and so I have made a bold bid for freedom by abstracting the bulk of it. The text would be best illustrated by two or three of those brilliant drawings which Mr. Joseph Pennell made of the great buildings of New York, but these are not available for reproduction here, and the reader must therefore recall to mind what the forest of stalks is like.

* * * *

The three pilgrims had walked down Broadway *en route* for the skyscraper district. It was a journey into wonderland. The Master Builder was in his element. The Engineer was almost as excited. He felt these mighty structures held a triumph for his craft. He knew that without the engineer the skyscraper was impossible. Building a skyscraper was not the mere placing of stone upon stone that produced great structures in the past; it was only possible by the use of the steel frame and the speedy elevator, two essentially engineering factors. The Flatiron Building came into view as they approached Twenty-third Street. The building looked like a wedge, its 286 ft. of height seeming much higher owing to the narrowness of the site. "It cost £1,800,000, and Burnham was the architect," the Master Builder ventured. (He had read it up.) To the left was Madison Square and the great Metropolitan Life Building with its beautiful white tower. "That tower is 700 ft. high," said the Master Builder, "and the clock face has a diameter of 26½ ft." They went in. It was a hive of business. The Master Builder bought a paper at a bookstall as usual. "How many people work in this building?" he asked the salesman. "Three thousand, and two thousand of them are women," was the reply.

* * * *

They strolled down Broadway to Park Place, and the wonder of the Woolworth Building burst upon their vision with all the suddenness of the first glimpse of the Grand Canyon. It was inspiring to see its sixty storeys, and its green copper-capped tower rising 780 ft. above the street level. Entering its main hall they stepped into the elevator; it was an express for fifty-four storeys; and having arrived at that level they entered a second elevator that continued the journey to the tower top. What a vision! Looking up Broadway beyond the beautiful tower of the Civic Hall, the white tower of the Metropolitan building stood above the encircling peaks of giant structures. Looking down Broadway the Singer Building disputed pride of place with the Liberty Building; whilst beyond was the Bankers' Trust Building with a cloud of steam escaping from the apex of its pyramidal top, like sacrificial incense from an Egyptian temple. They turned to descend. A card caught their glance. It read: "This building has forty acres of floor space, twenty-eight lifts, 3,000 windows, 80,000 electric lights, 7,000,000 bricks, and——" But simple figures lose their expression. The height is sufficient. It is high enough to look over an area of three thousand square miles. "And yet," said the Editor, as they descended in the lift, "the most wonderful thing about this building is that, as a

building, it is a financial failure. You will note that only one-third of it is occupied, and most of the upper offices are tenantless. I am told that the rent is the higher you rise the higher the rent. Yet the owner can afford to keep the place empty as he built it as an advertisement. In almost every city and town in America is a 'Woolworth' shop. It is a 'five and ten cent' store; nothing is quoted higher. It sells what are known as 'fancy goods,' and as it is a cash business the turnover is very great. Woolworth put his money into bricks and steel. He wanted 'the highest building in America, such as he realised that every newspaper would talk about, and that this continual advertising of the Woolworth Building would be worth millions of dollars to the shops. He can, therefore, afford to let the building remain almost tenantless." "Smart," said the Engineer, "but he'll lose that advertising value when the next skyscraper overlooks his." "That they can reduce the rent," replied the Editor, "if someone is boosting an agitation to limit the height of new structures, and Woolworth is said to be behind it."

* * * *

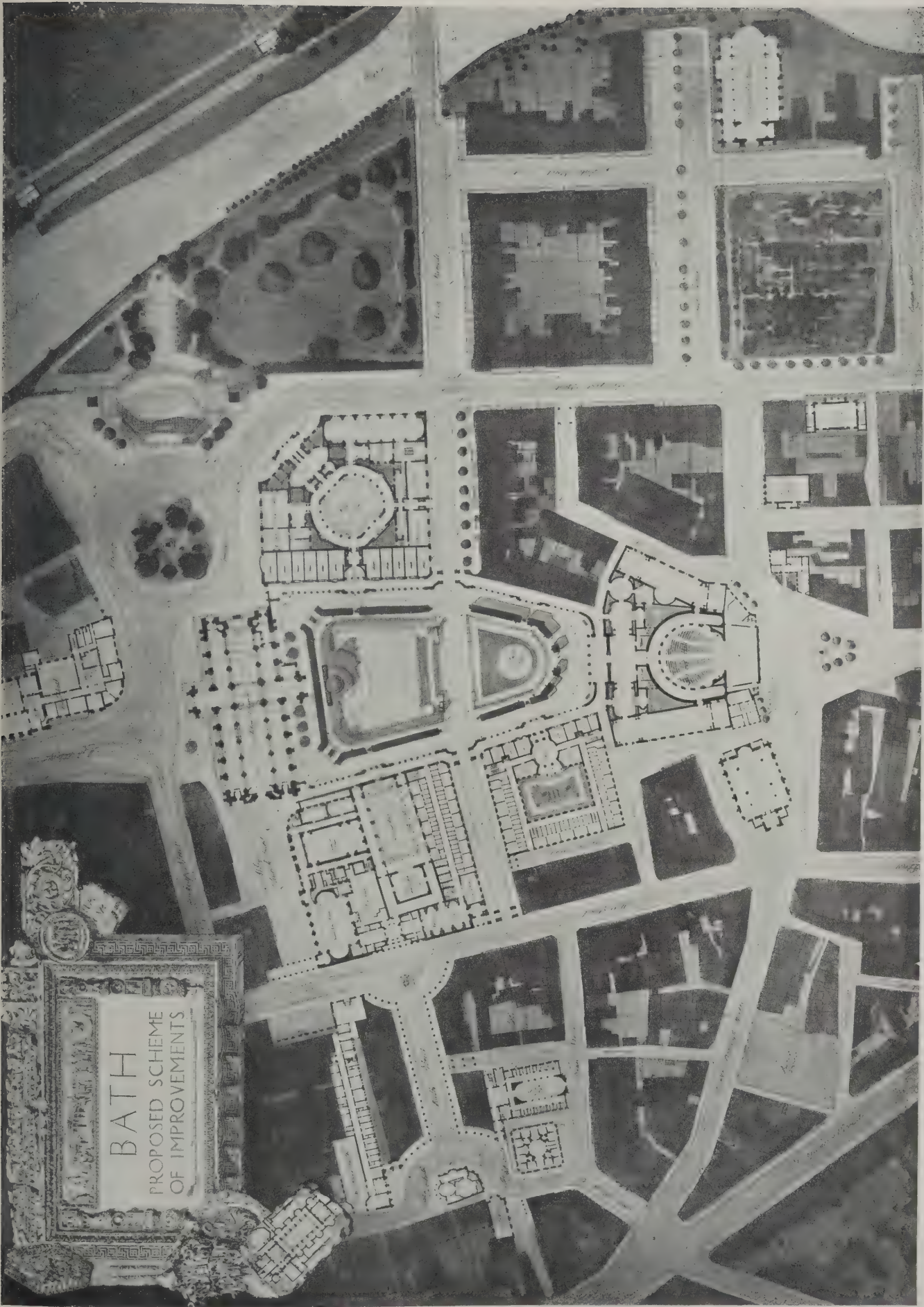
That afternoon the Master Builder and the Engineer called upon the builders of the Woolworth—Thompson, Starrett and Co., while the Editor sought out the Woolworth architect—Cass Gilbert. And they told their adventures that evening beneath the stars on the roof of the Astor. The Master Builder had great difficulty in suppressing himself during the meal. The coffee had no sooner been served than he let himself go. "The Woolworth was built," he began, "by an organisation of engineers." "Just so," said the Engineer, as he smiled and blew a ring of smoke; he pictured it a halo for his profession. The Master Builder noticed him, so continued: "But the chief brain of the Woolworth concern was a real estate expert, a business-like little party who kept his finger on the pulse of finance and prevented the professional element from misapplying the enormous funds at his disposal." and, as he threw a withering stare at the Engineer, he continued. "The story of the building of the Woolworth is a story of system, and that system applies equally well to any sphere of action. The scheme showed what would be the highest building on earth. The contractors reckoned that it would cost £1,280,000, and that it could be built in two years. Their charge would be 10 per cent upon the cost. So the contract was signed May 15, 1911. Nothing was left to chance. Everything was to move like clock-work. The work for every day for two years ahead had to be mapped out. The site had been excavated and cleared by the date of signing the contract. Then the great 'system machine' began to move. There were many elements on that job—the labour and the material. The labour problem is always particularly difficult in America, where so many foreigners work together with different tempers and even different languages. The labour trouble spoilt the world's first skyscraper, the Tower of Babel. But on the Woolworth building the mixture of languages was not a barrier to success, though there were no fewer than seventy different nationalities engaged, many of whom, Italian terra-cotta workers for instance, could not speak their own tongue. What the Tower of Babel lacked was organisation, the organisation which solved the labour problems on the Woolworth building. All the employers concerned, from the Thompson-Starrett organisation down to the firm that supplied the smallest item for the job, say a spare part, belonged to a National Association of Employers. Representatives of these firms conferred with representatives of the Workers' Unions, and a certain rate of wages was agreed upon to cover the period



L'ARC DE TRIOMPHE DU CARROUSEL PARIS
DÉTAIL DU CHAPITEAU ET DE LA BASE

STUDENTS' DRAWINGS (SERIES II.). XVI.—DETAIL OF CAPITAL AND BASE FROM THE ARC DE TRIOMPHE DU CARROUSEL, PARIS (PERCIER AND FONTAINE, ARCHITECTS).

MEASURED AND DRAWN BY F. JENKINS.



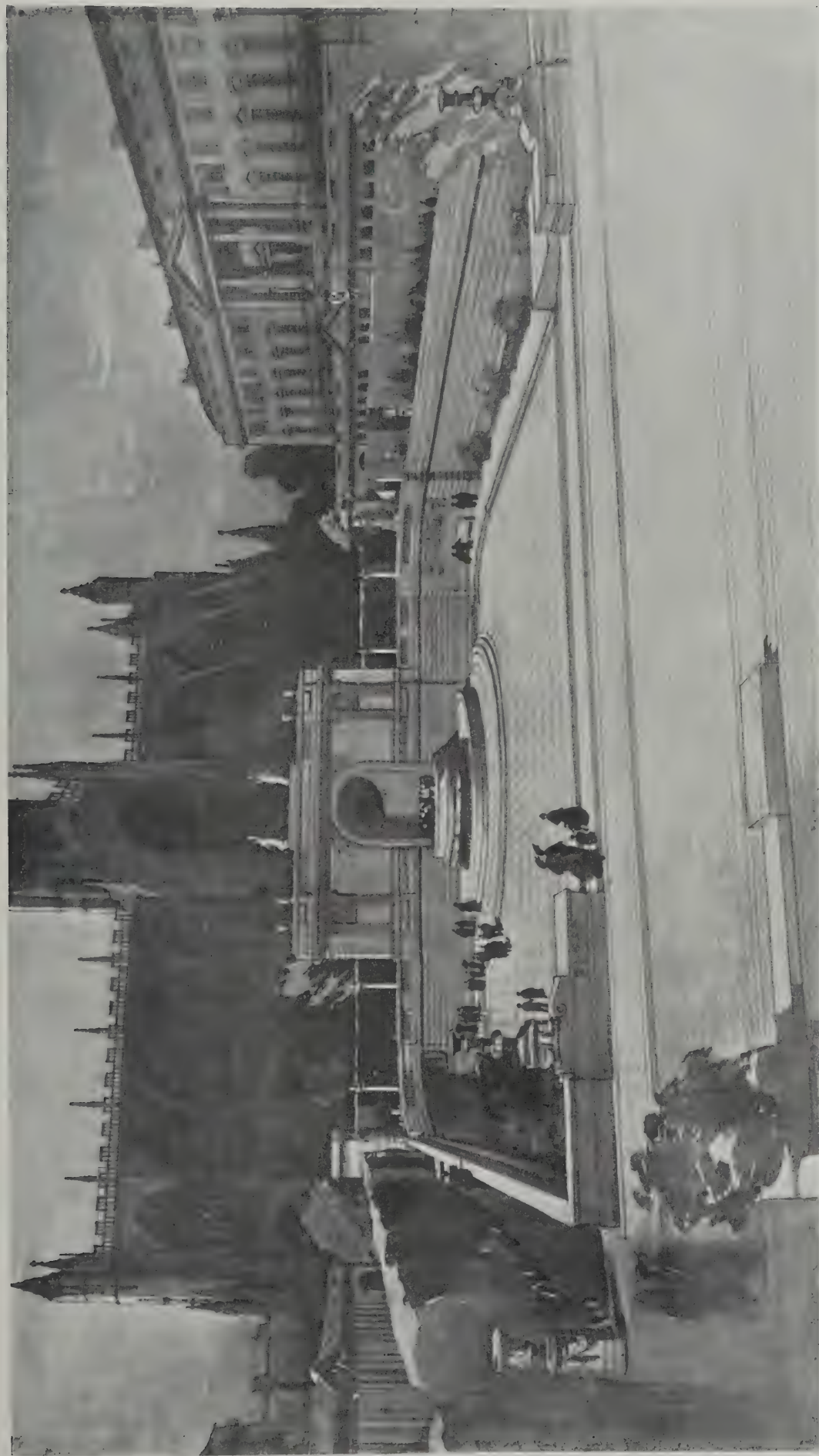
CURRENT ARCHITECTURE (SERIES III.). XXVI.—BATH IMPROVEMENT SCHEME: GENERAL PLAN.

ROBERT ATKINSON, F.R.I.B.A., ARCHITECT.



CURRENT ARCHITECTURE (SERIES III.). XXVII.—BATH IMPROVEMENT SCHEME: VIEW LOOKING SOUTH, SHOWING CONCERT HALL IN CENTRE.

ROBERT ATKINSON, F.R.I.B.A., ARCHITECT.



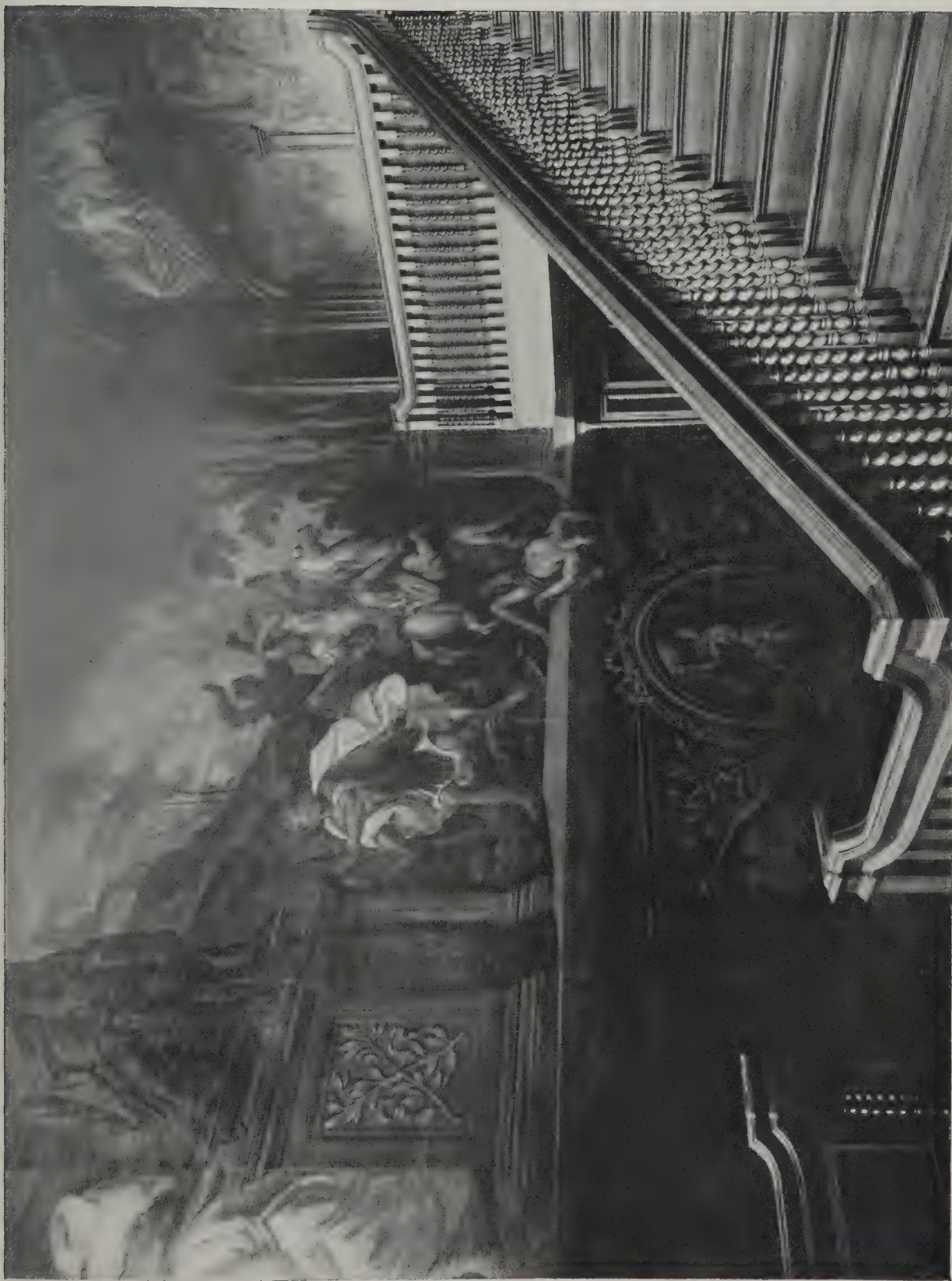
CURRENT ARCHITECTURE (SERIES III.), XXVIII. — BATH IMPROVEMENT SCHEME: VIEW LOOKING NORTH, SHOWING SUNK GARDEN.

ROBERT ATKINSON, F.R.I.B.A., ARCHITECT.



CURRENT ARCHITECTURE (SERIES III.). XXIX.—BATH IMPROVEMENT SCHEME: THE ORANGE GROVE, FROM THE RIVER.

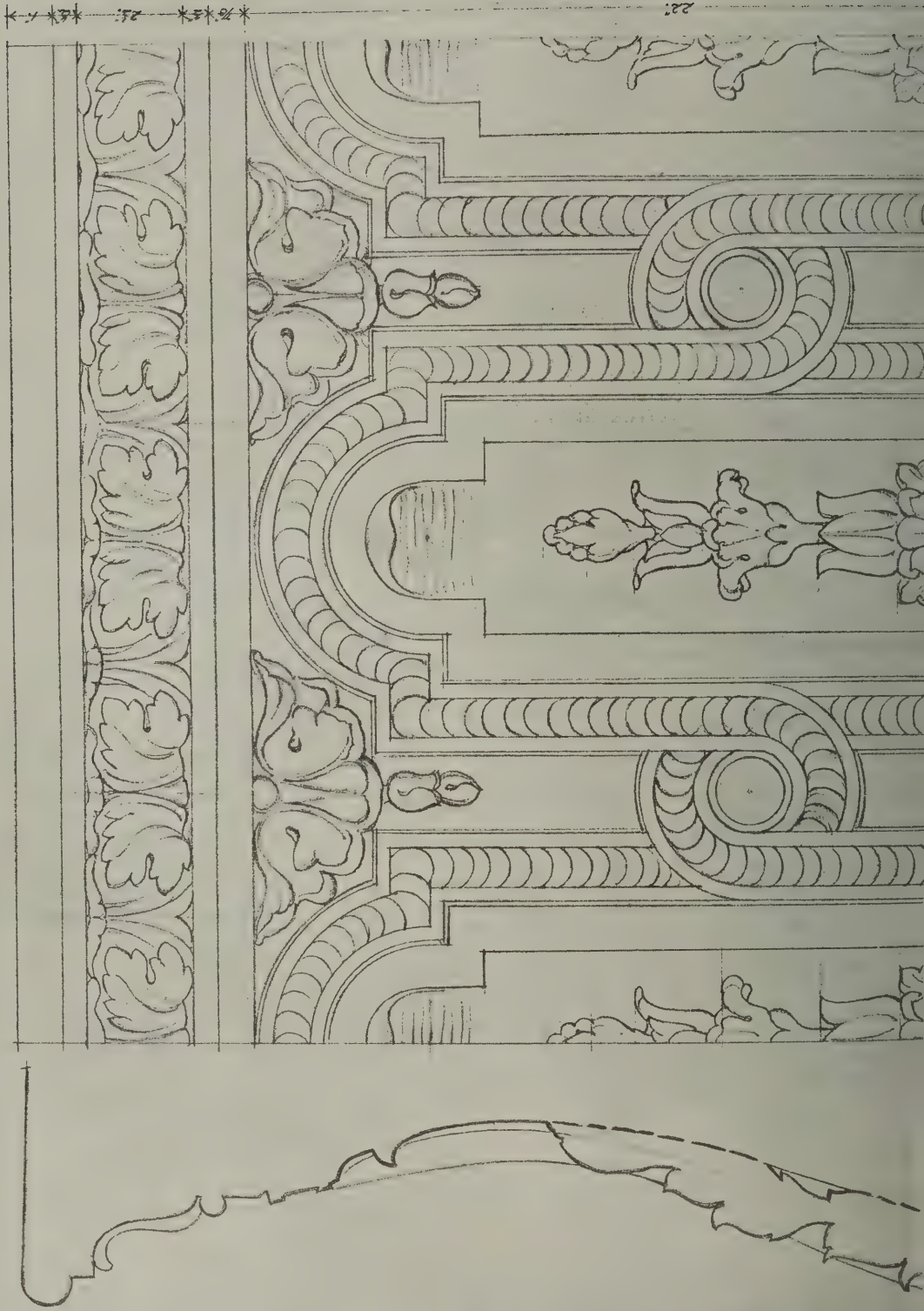
ROBERT ATKINSON, F.R.I.B.A., ARCHITECT.

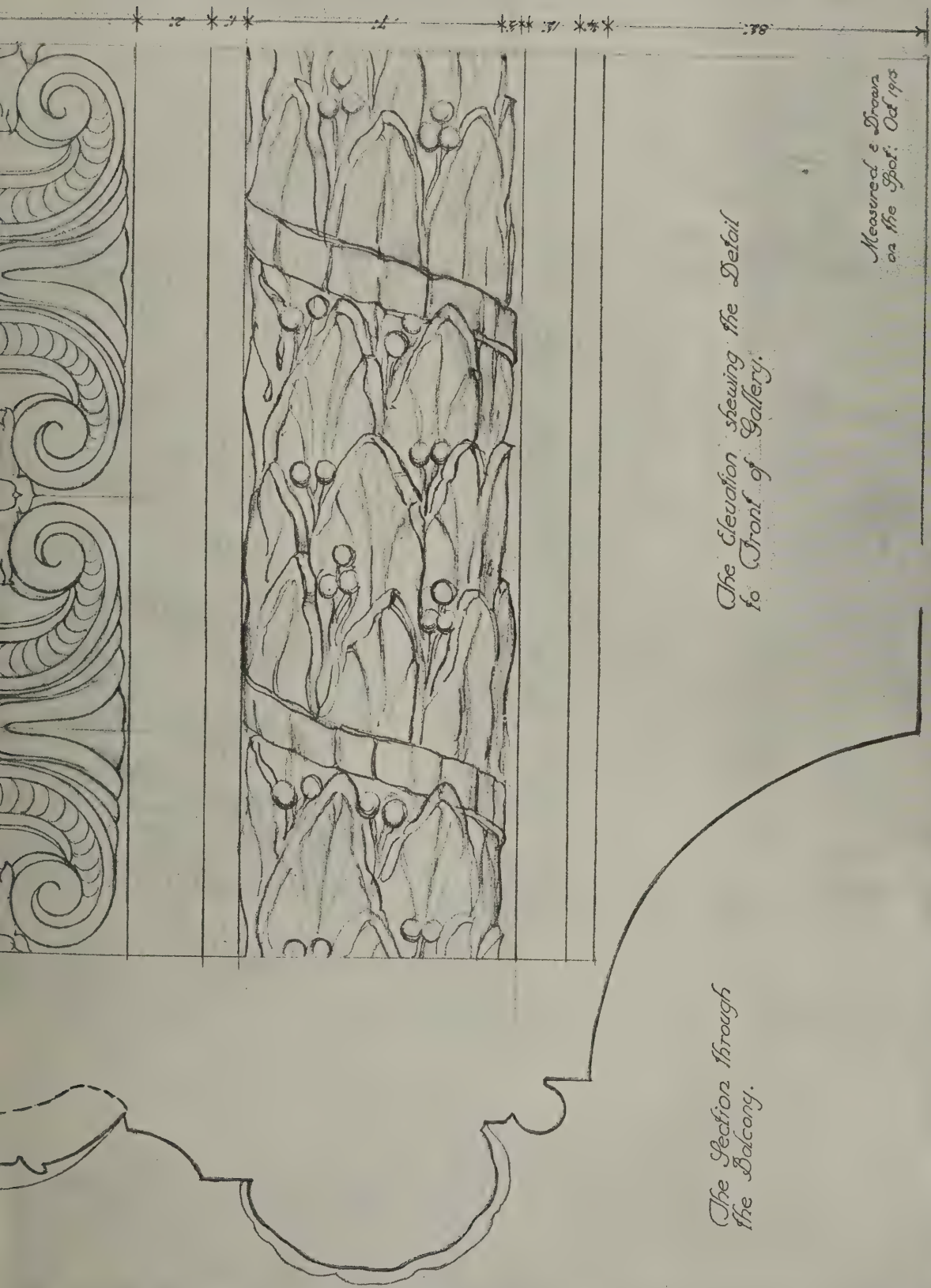


ENGLISH INTERIORS. V.—STOKE EDITH, HEREFORDSHIRE: GRAND STAIRCASE.

REPORT OF THE
COMMISSIONER OF THE
LAND OFFICE

Free Trade Hall. Manchester.
Internal Details to the Large Hall.





STUDENTS' DRAWINGS (SERIES II.). XVII.—FREE TRADE HALL, MANCHESTER: DETAIL OF GALLERY FRONT.
MEASURED AND DRAWN BY GORDON HEMM.

UNIVERSITY OF MICHIGAN
LIBRARY

contract. What was called a 'fair and square agreement' was signed and both sides went to work with confidence. No firm dared give a lesser wage than that agreed upon, or it would be cut out from the supplies. No worker dared ask for increased wages or concessions, or his union would fire him; so the usual problem of strikes and hold-ups was kept out of the estimate."

"With regard to the materials for the job, the contractors estimated the date each kind of material would be required on the site. The steelwork, for instance, would be wanted by the middle of October. This was the chief material of the building. On the speed in completing the steel frame the whole estimate depended. The contractors carefully figured it out. They reckoned that when the steel man got the order it would take a day for him to think it over. Fifteen days should be ample time for him to secure the raw material. Twenty days should be occupied with rolling the girders and stanchions, and the assembling of the parts should take thirty days. Five days would be lost in shipping the material, and the final sorting should take five days. The steel ought to be ready for fixing in seventy-five days! The steel man would then get the order, and a special department in the organisation called the 'Chasing Department' would watch that steel order and see that the various time estimates were not over-run. The same system would regulate the supply of every item for the rapid completion of the work. The terra-cotta manufacturer had a section of the 'Chasing Department' watching him, as also did the brickmaker, the timber man, the flooring, mosaic, lift and metal suppliers, so that by the time the building would be ready to climb, the sub-contractors would have all materials ready."

"The foundations were completed and the building was ready for the steelwork on October 19, 1911. The next day the steelwork started. No sooner was the steelwork of one floor completed, than an army of workers got busy on that floor, finishing it and chasing the steel frame upwards through the other fifty-nine storeys. The steelwork was completed on January 6, 1912. That day the flooring workers were on the fifty-ninth storey. Next day they finished the last floor. When the tower was put on, and the terra-cotta shell began to be fixed from the top downwards. Down past each floor the cover was placed, and at the same time the inner walls and ceilings were being completed. On September 25, 1912, the terra-cotta shell was complete, and the pressure was put on the finishers; all component parts of the system were tightened up and a battle begun against time. And they beat it!" concluded the Master Builder, somewhat excited. They clipped the estimate by fourteen days, getting it out on May 1, 1913, although they were handicapped by what they explained were 'changes of great magnitude,' necessitating an extra cost of 25 per cent. on the original estimate."

"There must be a tremendous pressure on the foundations of a great structure like the Woolworth," said the Editor. The Engineer felt this was an appeal to him, so he started off. He pulled out his slide rule for emergencies. "There is a crushing stress at the base of the steel columns of the Woolworth equal to 4,600 lbs. per square inch." He looked round for appreciation. "Let her go," said the Master Builder. "Consider what that means in securing strength," continued the Engineer. "They had to sink 185 feet below the surface to secure sufficient strength in the foundations to hold the Woolworth. But that was not the greatest problem. It was to build sufficiently

strong to resist any over-pressure of the wind. The strength of the steel frame of the Woolworth is calculated to resist a wind-pressure of 30 lbs. per square inch." Here the Engineer took out his slide rule, worked it like a miniature trombone for a moment or two, and then looked up with an air of satisfaction. "That means," he continued, "that it would take a pressure of 750 million pounds to make the Woolworth dangerous, and that pressure would be distributed over 24,000 tons of steel network—say, over 10,000 pieces riveted together. In such a frame there would be a certain resiliency that would give and return in any strong breeze." "So the tower of the Woolworth would wave in a gale like a flower on a stalk?" queried the Editor. "Yes, in a slight degree," the Engineer said, and he paused to let that significant fact soak in. The Master Builder broke the solemn silence. "Oh! I now know why they call them skyscrapers," he said, "they scrape!"

At this point, for want of space, I must break off the narrative. There is still a goodly portion to come; this, which shall appear next week, gives an intimate glimpse of the controller of the whole giant organisation. And when the reader shall have come to the end of the tale he will have a very complete idea of how they do these things in America, as well as an *arrière pensée* as to whether the result is worth doing at such a nerve-racking pace, and even whether it is worth doing at all.

UBIQUE.

THE PLATES.

Capital and Base from the Arc du Carrousel, Paris.

THE Arc de Triomphe du Carrousel, Paris, is a brilliant example of architecture of the Empire period in France, by the chief exponents of the style—Percier and Fontaine. Its sculptured details are extremely graceful in character, and very finely executed. On each of the two main faces, one towards the Louvre, the other towards the Tuileries Gardens, are four columns on tall pedestals, carrying an entablature, and it is the capital and base of one of these columns which are shown on the plate. The original drawing, a most admirable piece of work, is by Mr. F. Jenkins, of the Liverpool School of Architecture. Some further drawings by Mr. Jenkins of the same subject were published in our issue for October 20, 1915.

Bath Improvement Scheme.

This is fully described in the article on the next page.

Grand Staircase, Stoke Edith.

Stoke Edith displays that grand manner of building which distinguished the mansions of the early eighteenth century in England. About its great staircase there is an air of splendid dignity. The paintings are by Thornhill.

Free Trade Hall, Manchester.

The drawing of the gallery front, by Mr. Gordon Hemm, shows a portion of ornament characteristic of the mid-nineteenth century; the Free Trade Hall having been built in 1856 from designs by Edward Walters.

The Theatre, Versailles: A Correction.

In our issue for last week we published a plate of the Theatre at Versailles, and ascribed it to Jules Mansart. This is incorrect. Mansart, it is true, designed the exterior of the eastern wing, in which the Theatre is situated, but the Theatre itself was designed by Mansart's great-nephew, Jacques Ange Gabriel; the sculptures being by Pajou and Guibert. The Theatre was inaugurated in 1770. It was much altered by Louis Philippe.

BATH IMPROVEMENT SCHEME.

THE report of Mr. Robert Atkinson, F.R.I.B.A., to the Council on the Bath Improvement Scheme, gives a most interesting survey of Bath's architectural and town-planning history, but the proposals for future development are the most important part. Mr. Atkinson (whose scheme is shown by the plates in this issue) says that the only possible area for extension must be in a south-easterly direction, and the solution must avoid main streets, restrict the extensions to the centre of the mass, avoid as many good buildings as possible, and remove only dilapidated property, which would in itself be a town improvement. The Abbey Green and lines of North Parade buildings, with other clearly defined property lines, suggested the open tapering parallelogram adopted (somewhat after the shape of the Piazza San Marco in Venice), and with the object of opening out the south side of the Abbey Church and of using it as a background, this figure was lengthened as far as possible to the southward to admit sunlight and also bring into view the top of Beechen Cliff. It is considered of greater importance to preserve the east side of North Parade Buildings than the symmetrical squaring of the space. Its eastern side is dictated by the lines of the concert room and baths, and is crossed by a carriage way, carrying on the line of North Parade and swinging slightly on the centre line towards the south so as to strike Stall Street at right angles. All buildings and bathing places must face on to and be entered directly from the Forum. In the plan a site is found for the extension of the Queen's Baths, a new site for a self-contained bathing establishment to the south, a concert hall to the south-west, a space for a second bathing establishment when required to the east, and a site for a large hotel facing the river and gardens. The whole of these establishments, as well as the existing ones, are entered from the encircling covered cloister, which has openings to the Abbey Churchyard and the Orange Grove, and steps leading down to St. James's Street and Orchard Street.

The Forum.

In the proposed scheme the Abbey Churchyard is about a foot higher than the nave, but to the south of the church a small area has been cleared down to a depth of three feet below the churchyard level, and this level has been adopted as the general level of the Forum, with the object of clearing the accumulated earth and giving full value to the great height of the building. The deep sinking at the north end emphasises the Abbey in the background, and the level gradually rises towards the portico of the Concert Hall. A bandstand worked in against the background of the screen wall below the Abbey completes an open-air concert theatre of which the steps and balustrades form the auditorium. Roman detail has been utilised here as best suited to the proximity of the Roman Baths. Strong encircling lines of trees, paving, and roadways are carried completely round the forum, and evergreen oaks, ilex, or evergreen trees are planted to give a colour note in the winter months. The effect of an Italian garden has been aimed at deliberately, flower beds have been avoided, and vases substituted to produce a brilliant effect, as being easier to replace with blooms in their full beauty and constantly changed.

The colonnades are a continuation of the policy inaugurated by Baldwin in Bath Street, and the porticos to the Pump Room. The colonnade to the Pump Room is one of the finest gems of architecture in Bath, and has been used as the basis for the present porticos, each pediment marking the entrance to one of the principal blocks of new buildings. These colonnades are not to be built over, thus avoiding the defects of Bath Street, and they should have partly glazed roofs to increase the effect of lightness as far as possible. The forum is roughly 200 ft. by 400 ft., which gives an area equal to Queen Square, and the buildings which take their lines from the North Parade buildings carry on exactly the height of the parades and do not destroy the preponderance of the Abbey.

The Concert Hall.

The northern end of the Forum is closed by the Abbey Church, and the southern end closed by a new Concert Hall. This portico is based on that of St. Martin's Church, but the detail is more akin to the work of the Woods. The Roman detail of the sunk portion is gradually tempered to the late eighteenth century detail of Baldwin in the colonnades, which partakes of the Greek revival, at that time rapidly becoming fashionable. Unfortunately, it is practically impossible to leave Weymouth House *in situ*, but the St. James's Street house has been preserved, and the façade of Weymouth House added to its return end. The City Wall, which crosses the site, is at a lower level than the hall, and could be left *in situ* in the basement. To prevent any possible competition between the two main buildings (the Abbey and the Concert Hall), the hall is kept fairly low and extremely simple externally. The concert hall itself is large, capable of accommodating several thousand persons, and is provided with ample promenades, crush halls, and refreshment rooms. The remainder of the building replaces the Literary and Scientific Institution. Club rooms, exhibition galleries, and libraries are provided on the first floor, and it is intended to form a Roman Museum in the basement galleries, which by reason of the fall in the streets will be amply lit and actually above ground.

New Bathing Establishments.

To the west of the Forum an entirely new bathing establishment has been planned, with a central glazed winter garden adorned with pools and ornaments. This building is of two storeys in height (with lift), and gives accommodation for about 100 bathers, and has a large lounge hall, cooling rooms, lifts, etc., but is not by any means final. The front of this building towards the Forum comprises North Parade Buildings re-erected. North Parade Buildings display much of the sound design and building associated with the elder Wood, and by their re-erection would provide a symmetrical elevation with the east side, which remains untouched, the upper storeys providing accommodation for the Baths administration. North Parade Buildings are sufficiently good to preserve, and could be repaired and made into shops or tea rooms opening off the arcade. At some future date the space between them and Orchard Street could be cleared for a second new bathing establishment on the lines of the one opposite, leaving the front walls intact. (Mr. Atkinson acknowledges the help given him by Mr. A. J. Taylor.)

The outlook over the Orange Grove and river, and the necessity of placing a main entrance at that side, are perhaps main considerations of the hotel. A large central palm court or water garden for the centre of the block, with entrance from the colonnade of the forum. Many open balconies and terraces are provided as essentials in hotel buildings for pleasure resorts. The general architectural character is based upon the work of the Woods and Baldwin, with height as far as possible agreeing with those of the North and South Parade Buildings.

Previous additions to the Queen's Baths encumber very seriously the Roman remains, and it is therefore proposed to remove them entirely and substitute a new system on the extended site, with accommodation for about eighty bathers in two storeys. The new buildings give a total of about seventy new baths, against the 100 existing, and 160 to 200 new dressing rooms.

The Pump Room and colonnades from Stall Street a magnificent group of buildings of the finest taste, being part of the great scheme of which Bath Street is a part. It was evidently Baldwin's intention to balance the front of the Pump Room by a similar wall to the south of the Queen's Baths on the space now occupied by the City Wall, and as a part of this scheme he intended to place the large waiting hall of the extension in such a way as to complete the balance of the front to the City Wall, and a colonnade to balance that the Churchyard gives access to the street leading to the Forum. The first attic storey of the Queen's Baths should be removed. The removal of the mass of the Queen's Baths enables the circular Roman Bath to be treated in a way which it fully deserves. In order to make the principal entrance from the Forum, a doorway has been arranged on to the upper gallery of the Roman Bath, which gives access to the concert hall and Pump Room and waiting hall of the new extension, which latter is also connected directly to the Pump Room. The old Queen's Baths proposed to be used for special treatments.

The fine front of Ralph Allen's house, Mr. Atkinson proposes to erect near St. James's Church, to close the vista from Stall Street across New Orchard Street, and the Friends' Meeting House here, which considers good enough to preserve, recommends its re-erection on a new site facing Kingston Square, at present occupied by a conspicuous hoarding.

Bath Street.

Bath Street, the backbone of Baldwin's great scheme of 1790, has been the object of much dissension, but although many times threatened it still fortunately exists, albeit in a somewhat dangerous state. A great structural mistake was made in carrying the whole weight of the structure on excessively thin columns, whose instability was evidently recognised by the architect. Its destruction has been advocated on account of the settlement and also on the grounds that it is narrow, dull, dark, and unsuitable for business purposes. Narrow it certainly is, but its grace and refined proportions and beautiful window details ought to be sufficient to preserve such a magnificent example of street architecture at all costs. It is conceivable that in Bath foundations are so old, but modern methods can surmount these difficulties, and, taken alone,

ere seems to be no other argument against Bath Street—its preservation would be simple. I know nothing (says Mr. Atkinson) more likely to bring visitors to Bath than these fine streets, and to destroy them removes at once one of the greatest assets. With a little refurbishing, there is no reason why Bath Street should not regain its popularity.

Suggestion as to the Present Baths.

The Hot Bath marks the commencement of the modern bathing system. Architecturally, the building is one of the best which Wood, jun., produced, and is worthy of very high consideration. The planning is beautiful and ingenious, giving an octagonal central bath or spring surrounded by a square block of which the angles are cut off. As the bath is primitive and out of date, but is nevertheless a gem of architecture and a monument of the later eighteenth-century bathing habits of Bath, it can never be made serviceable, even with drastic alterations, and I would

suggest that it be disencumbered of its parasitical additions and restored to as nearly as possible its original state. It might then be furnished with contemporary fittings and furniture and opened to visitors as a complete establishment of the days of Anstey. The Cross Bath is of such great interest and of such fine architecture that I would recommend its restoration in the same manner as the Hot Bath; it is well worth the trouble and expense. The accommodation of these combined establishments is so small that their loss under the new scheme would be negligible.

Burton's Royal Baths, after ninety years of use, are still substantially as then erected. Both the tepid and private baths are now out of date and, as it is not architecturally of so much value, I feel no sacrilege in suggesting that it be turned into a first-class swimming bath on modern lines. It shows the influence of the Greek Revival in architecture very strongly and has a thoroughly classical plan. Its conversion would be simple.

The New Royal Baths are comparatively recent and have been modernised; but their situation renders them difficult of improvements. I would, perhaps, suggest that a portion be used to replace the accommodation of the Cross and Hot Bath and the remainder remain available for visitors to the Grand Pump Room Hotel and others.

I would also advocate the opening out of St. Michael's Place into Westgate Street, which would provide a new view of the Hot and Cross Baths and a much needed outlet to Bath Street on that side. It has been suggested that the buildings dividing the Churchyard from Cheap Street be removed, a suggestion which perhaps originates from the idea of John Wood. In my opinion it would be a great mistake to do so. The quiet, old-world space would become noisy and bustling were this done. The buildings form a screen to the busy street and shut out a great part of the noise. Of course, were it necessary to widen greatly Cheap Street the removal of this thin wedge would be the cheapest way of doing it, but the widening of Cheap Street depends entirely on the widening of Westgate Street also, and no purpose would be served by doing Cheap Street alone.

Orange Grove and Gardens.

The approach to the city by way of the Orange Grove from the station is greatly restricted and blocked by the position of the Royal Literary and Scientific Institution, and any improvements in this direction must mean the complete removal of that building. The continuation of the line of Pierrepont Street and Manvers Street until it strikes the Grove seems to be the local and common-sense way of dealing with the approach. It was decided to centre on the space of the Orange Grove as existing, and the obelisk selected as the focal point. A large flight of steps lead down to the gardens and the river and provide the necessary horizontal lines as the foreground to the Abbey. These steps provide a visible entrance to the gardens which is badly needed and complete the Orange Grove towards the river. Vases and paving are introduced as a gradual transition between the natural lawns and trees and the hard and formal lines of the streets above. The circular garden of the Orange Grove it is not proposed to interfere with, except that the obelisk is raised upon a pedestal so as to make it more conspicuous. The line of the present houses on the south, which have no particular interest and which would be demolished, is set back several feet to expose fully the east front of the church.

Playing Fields.

In my opinion, the preservation of the cricket fields is of first importance. This fine green outlook from the Orange Grove is too beautiful to contemplate its development as building sites. Fortunate chance and the expense of raising the houses above flood level preserved this fine open space for us. Cricket and tennis pitches, bowls, and other means of pleasant recreation are included, with suitable pavilions and a certain amount of gardening to brighten the picture, increasing in richness towards the river. A carriage-way is shown carried across from Laura Place to provide approaches to both cricket and tennis pitches and to lead out to the North Parade Bridge. The central outdoor recreation centre would become an essential feature if the season were to be extended throughout the summer, and boating could be brought below the bridge (by protecting



CONJECTURED RESTORATION OF THE CIRCULAR ROMAN BATH.

BY ROBERT ATKINSON, F.R.I.B.A.

the weir) and landing-stages constructed under the Grand Parade in the otherwise useless arcades.

The Old Mill, by its situation and picturesque appearance, is one of those places which only need development to become ideal pleasure resorts. I have seized upon it as a possible hanging tea-garden, with pergolas overlooking the water and with lightly-roofed pavilions for inclement weather, and perhaps using the mill building as a nucleus and for a light restaurant. I do not see why it should not be as popular as such places are on the Continent. To ensure its success it would be necessary to connect up in the way with the Orange Grove. A rustic bridge could be thrown across between the lower level of the gardens and the breakwater projection. If kept at a sufficiently low level and of very simple character it would not injure the view of Pulteney Bridge, and could be further carried on to the opposite bank to make a direct connection to the playing fields.

The Approaches.

The report concludes with a suggestion as to improving the approaches from the G.W.R. Station, including a widening of Manvers Street and revival of the Kingston Square plan. The approaches to the city by road are good, particularly the London road, where for miles on end the road is lined by stately terraces and fine gardens. As a rule the roads are considerably restricted as they enter the old city, and improvements might be effected at several points. The bottom of Charlotte Street to Kingsmead Square might easily be widened, and the outlet also from Westgate Street to Kingsmead Square might easily be widened so as to divert traffic down Westgate Buildings. There is not at present a very obvious or direct connection between the two railway stations, and an encircling road would probably be the best means of effecting this. The easiest way of doing so would be by means of the Broad Quay, which could be widened as far as Green Park. There is no obstacle worth mentioning in its execution, and the improvement to the river side would be enormous, and the quay, planted with trees, would soon become a delightful walk.

THE LATE MR. CHARLES HADFIELD.

Mr. Charles Hadfield died at his residence, Park Cottage, Norfolk Road, Sheffield, on March 22, in his seventy-sixth year. He was the son of the late Matthew Ellison Hadfield, and the representative of an old Derbyshire family which had been settled for centuries in the neighbourhood of Glossop. Born at Sheffield in 1840, Mr. Hadfield was educated at St. Cuthbert's College, Ushaw, Durham. He was articled to the late John Gray Weightman and the late George Goldie, and in 1864 he passed the Associateship examination of the Royal Institute of British Architects, and began practice with the late Mr. E. Hadfield in Sheffield. In 1872 he was elected a Fellow, and became a member of the Council. He was also one of the founders and was a past-president of the Sheffield Society of Architects and Surveyors. For many years he was one of the old council of the Sheffield School of Art. His work in Sheffield included: The Gas Company's offices, the Corn Exchange, the chapels, gate-house and offices, lodges, etc., and the laying-out of the Intake Cemetery; Messrs. Pawson and Brailsford's buildings,

Church Gates, Cairns' Chambers, Church Street; the new King's Head Hotel, and the new Royal Hospital. Mr. Wilfrid Randolph, an old pupil of Mr. Hadfield's, writes of him in the "Sheffield Telegraph" that his most characteristic work was of a somewhat specialised kind, namely, that upon which, whether civil or ecclesiastical, he could bring to bear his wide and sympathetic knowledge of mediæval design. Probably he owed something of his happy touch to the influence of the late Mr. J. F. Bentlev, architect of the Roman Catholic Cathedral, Westminster, with whom he was on terms of friendship. Between 1870 and 1888 Mr. Hadfield cultivated the Perpendicular and Tudor phases of Gothic with singular faithfulness to precedent. "Amongst the earliest instances were the charming series of Catholic elementary schools in Sheffield (St. Wilfrid's, Heeley, St. Edmund's, Sheaf Gardens, and others), together with the picturesque little country church at Wath, and the larger one at Handsworth. More conspicuous were such local buildings as the Corn Exchange and Church Gates Buildings. The last-named certainly stands among the most successful examples of modern Gothic street architecture. It must not, however, be supposed that the Gothic work of Mr. Hadfield was confined to a single period or style. A notable instance to the contrary occurs in the small tower oratory in St. Marie's Catholic Church at Sheffield. This is a charming and original composition of a flowing decorated character picturesquely elevated. . . . Another freer variation of style may be noted in the several small school chapels, etc., at Derwent and elsewhere in Derbyshire, where Mr. Hadfield delighted to adapt to the purposes of the moment the homely character of the local sixteenth or seventeenth century work. Mr. Randolph adds that among the important designs executed by Mr. Hadfield were the chapels of St. Ignatius, Preston; the Great Northern Hotel, Leeds, before the fire there; the Early Decorated Church, at Bootle; St. Mary's Church, Wombwell; Cairns' Buildings, Sheffield; and the re-building of Thornbridge Hall, Bakewell. Cairns' Building especially (dating from 1806) in its quiet composition and detail, stands as an admirable application of traditional English forms to present-day purposes, unspoiled by straining after effect which mars so much contemporary street architecture. To quite another order, of course, belonged such a structure as the Sheffield Royal Hospital, which leans rather on such broad and simple Italian precedent as was deemed suited for its purpose, studied, however, with the same care and interest as marked the architect's treatment of more familiar modes." Mr. Hadfield was joined in practice by his son, Mr. C. M. Hadfield, F.R.I.B.A., in 1897. Mr. Charles Hadfield married in 1867 Miss Rimondi, of Halifax, and left a family of two sons and three daughters.

Mr. Henry Theobald.

We regret to record the death, which occurred at his house at Isleworth on March 9, of Mr. Henry Theobald, who was one of the leading quantity surveyors. Born in 1844, he early became a pupil and assistant in the firm of Gardiner and Bell, quantity surveyors, of 110, Great Russell Street, and upon Mr. Bell's retirement Mr. Theobald was taken into partnership by Mr. Gardiner, a gentleman of very marked personality and great authority in his own profession. In time Mr. Theobald succeeded as head of the firm, and for many years carried on a large practice in con-

junction with his son, covering many important buildings, including some erected by H.M. Board of Works. He was elected a Fellow of the Institute of Surveyors in 1883. His courtesy, fairness, and thorough knowledge of his work led to him being frequently asked to act as arbitrator in building disputes. The many architects with whom he was necessarily much in contact testify cordially to his ability and attention to the interests of the clients. Nor was he unmindful of the rights of the builder, particularly in complicated questions of account, where he was practically the arbiter. The writer of this notice, an architect who had known him for about fifty years, mourns him as a friend and a most careful and trustworthy adviser.

Mr. Rutter Fletcher.

Mr. George Rutter Fletcher, who died at Highgate on March 7, in his eighty-first year, was for many years an honorary secretary of the Society for the Protection of Ancient Buildings. He was especially associated in this work with William Morris, Philip Webb, Professor Lethaby and Dr. Philip Norman.

NEWS ITEMS.

Building Activity in Croydon.

In spite of building trade stagnation, 30 houses have been erected in Croydon since last March.

Business Change.

Messrs. A. C. W. Hobman and Co. Ltd., tarpaving, tarmacadam, artificial stone, and asphalt contractors, Stockholm Road, South Bermondsey, London S.E., announce that they have appointed Mr. E. A. Sharpington as manager of the business.

Captain Twelvetrees.

Lieutenant Richard Twelvetrees, son of Mr. W. Noble Twelvetrees, M.I.M.E., has been gazetted to a captaincy dating from February 1 last. Captain Twelvetrees is attached to the Headquarters Staff of the British Expeditionary Force in the capacity of Inspecting Officer of the Army Service Corps Mechanical Transport.

To Encourage Building.

The Warrington Town Council has decided to ask other corporations to join in request to the Local Government Board to receive a deputation which would urge the need for legislation to cheapen the transfer of land and buildings, so as to encourage the building of houses for the working classes.

Mr. Ernest Newton.

Mr. Ernest Newton, A.R.A., president of the Royal Institute of British Architects in company with the Rev. E. W. Barnard, F.R.S., and Professor T. F. Tout, has been elected a member of the Athenæum Club, under the rule which empowers the annual election of a certain number of persons "of distinguished eminence in science, literature, the arts, or for public services."

Competition for Irish University.

The Senate of the National University of Ireland invites architects practising in Ireland to submit designs for a University building. Applications for conditions accompanied by £2 2s. deposit (which will be returned on receipt of a bona-fide design), are to be made to Sir Joseph McGrath, LL.D., registrar, National University of Ireland, 49, Merrion Square, Dublin.

CONCRETE AND STEEL SECTION

(MONTHLY.)

CONSTRUCTION OF CONCRETE PURIFIERS AT ROMFORD.*

BY W. D. CHILD.

had for some time given consideration the question as to whether the construction of purifiers in their simplest form—when resting upon or sunk into the ground—might not be more economically effected by the use of Portland cement concrete than with the usual cast-iron boxes.

Having become acquainted with the "Vinget" concrete block-making machine and the variety of material that may be produced by its use, I resolved to go more fully into the question of the cost of concrete construction. By using suitable proportions of crushed clinkers, breeze, sand, and Portland cement, I found that blocks measuring 32 in. by 9 in. by 9 in. could be produced at a cost of 10d. each, and quoin blocks, closers, and other shapes at proportionate rates. By the use of these blocks, the construction of the purifier boxes would be carried out without the erection of any timber frame work, or shoring, and in this way considerable economy would be effected.

During the winter of 1912, the make of gas at Romford had increased to such an extent that the oxide purifiers, 16 ft. by 16 ft., then in use, would only run about twenty-four to thirty hours without requiring to be changed, principally on account of heavy back-pressure, which would rise to 28 in. of water, with great risk of gas passing at the water lutes of the boxes in which the covers were sealed. These purifiers were erected when the works were built in 1892, at which period the make of gas was about 30 million cubic feet per day.

I therefore prepared plans and estimates for the construction of a set of four concrete purifiers, each 30 ft. by 20 ft. by 18 in. internal dimensions, with 18-in. cast-iron pipe connections to a Weck's valve. These plans, etc., having been submitted to the directors of the company and their approval secured, tenders were invited for the necessary cast-iron coping plates, steel luteless covers, Weck's valve, and connections, etc. The work was put in hand in June, 1913, the gas company undertaking the erection of the concrete boxes, while the ironwork was in the hands of well-known contractors.

Excavation and Concreting.

An excavation was made approximately 30 ft. long by 33 ft. 2 in. wide and 6 ft. deep, the sides being cut truly vertical, and the bottom accurately level. Over the whole surface of this bottom Portland cement concrete, 18 in. thick, was placed in two layers, each 9 in. thick.

To ensure a level bottom two parallel lines 9 in. by 3 in. deals were placed 12 ft. apart along the whole middle length of the excavation, the upper edges of the deals being truly level. This centre portion of the bottom was completed first, and then set served as a guide for putting in the side widths.

The 9 in. by 3 in. deals were then again

placed in position 15 ft. apart, so as to break joint with the bottom layer, and in placing the concrete in position the surface was at once faced with a finer and richer concrete, so as to form a conglomerate mass of perfectly level concrete, requiring no surface rendering, the latter having a tendency to scale off. Upon this level bottom the outside and the division walls were distinctly marked out, and the builders commenced setting the concrete blocks.

Outer and Division Walls.

The outer walls were faced on the inside with blocks 9 in. deep and 9 in. wide, with quoin blocks built in to bond with the division walls, and these blocks were backed up to the solid earth with 9 in. of mass concrete. This was put in when each two courses of blocks had been set in position.

The division walls were built with blocks 9 in. deep by 8 in. wide, set 2 in. apart, the space being filled in with Portland cement grout, forming a solid wall 18 in. thick. When the work arrived at the proper height this space was used to receive the holding-down bolts of the cast-iron coping plates. The bolts, being accurately placed in position, were then grouted in solid.

Two courses of Staffordshire blue brick were built into the walls with 2-in. projection, and these served to support the ends of grids carrying the purifying material. The bearing bars for wood grids are supported on concrete corbel blocks, built into the walls.

As soon as the walls were raised to the full height, the upper surface was rendered with good Portland cement composition $\frac{3}{4}$ in. thick, and when this had thoroughly set and dried, it was painted with boiled oil to form an adhesive surface for the jointing material used in bedding the cast-iron coping plates.

To ensure the concrete walls of the boxes being gas-tight, the whole of the inner surface was dressed with "Ironite." The "Ironite" is mixed with water in a pan in small quantities, kept constantly stirred, and applied to the face of concrete with a stiff brush, stippling it well into the pores of the concrete. For the work in question I used two coats—allowing the first coat to rust and dry before applying the second—and secured a sound job. The method of application fills up all cavities in the concrete, and chemical and mechanical union takes place between the "Ironite" and the surrounding surface with but little probability of a subsequent parting, as frequently occurs with cement rendering.

Coping Plates.

The coping plates of cast-iron were designed about 5 ft. in length and 1 ft. 9 in. wide, with a rounded nosing overlapping the outer edge of wall. The inner edge of plate was turned upwards, raised slightly above the depth of flanges, and planed to a true surface, to form a continuous bearing for the jointing material of luteless covers. Guide pins were accurately fitted and driven in, to bring this bearing surface truly together, when the plates were bolted in position.

The jointing material used for the covers was a specially prepared hemp gasket $1\frac{1}{2}$ in. by 1 in. square section, with tallow worked in in the course of manufacture.

The boxes were divided longitudinally by a gangway, formed with two 15 in. by 4 in. by $\frac{1}{2}$ in. steel channels (weight 42 lb. per foot) riveted together, and with 5 in. by 4 in. by $\frac{1}{2}$ in. angles, riveted to the outer edges of channels to form a bearing surface for the covers of boxes. The gangway was designed to cut the boxes in two, so as to reduce the size of the covers, and also to form a roller path for a travelling crane with extended arms to lift two covers at the same time.

Owing to labour troubles there was a good deal of delay with the work, and the type of crane as ascribed was discarded and the overhead gantry, with traversing cranes, to lift and travel one cover at a time, was erected in its stead.

Two cast-iron standards were fixed in each purifier, to give support to the gangway to which they were riveted, and the feet of standards were securely anchored to the concrete bottom, to resist the lifting strain, caused by the pressure of gas upon the underside of covers when in action.

Bearing Bars.

The bearers to support the lower tier of wood grids were 6 in. by 4 in. pitch pine, supported on brick blocking at 5 ft. intervals. The upper tier of bearing bars were formed with two 9 in. by 3 in. deals, bolted together with an 8 in. by $\frac{3}{4}$ in. steel flitch plate between. The $\frac{1}{2}$ in. space at top and bottom was run full with hot pitch and tar to protect the steel flitch plate. These bearers were supported on concrete corbel blocks, built into the walls, and were strong enough to carry the wood grids and purifying material with no intermediate support between the walls.

Wood Grids.

The grids were formed with strips of 6 in. by 1 in. rough deal, kept at their proper spacing by being nailed to $1\frac{1}{2}$ in. by 1 in. battens. These grids were supplied at a lower cost than the usual bevel bar grids in hard wood frames. They give a good surface for shovelling upon, afford a very free passage for the gas, and have no tendency to clog with the purifying material.

The pipe connections were arranged for a downward flow of gas through the boxes, and tubes and cocks were fitted so that gas tests on pressure may be taken at each layer of material.

Pipe Connections.

The whole of the socket joints of the 18-in. connections between the Weck's valve and the boxes were made with tallow joints.

Rings of white yarn of suitable length are prepared by being soaked in a mixture of white lead, vegetable oil, and tallow, and then allowed to dry. These rings are caulked into the socket in the usual way, leaving a space about $2\frac{1}{2}$ in. to the face of socket. Another ring of prepared gaskin is then tucked in just level with the face of the socket, leaving an annular space about 2 in. deep. When caulking in the last gaskin a gate is left at the top of the pipe, and through this a mixture of hot tallow and linseed oil is poured in sufficient to fill the annular space.

I became acquainted with this form of joint at Yarmouth many years ago, and have always used it when fixing heavy

*Extracts from a Paper read before the Southern District Association of Gas Engineers and Managers at their Annual Meeting on March 16, 1916.

valves, etc., as, by the elasticity, it relieves the socket from strain, and with pipes of large diameter it is much cheaper than the lead joint.

In adopting this form of construction for the purifiers, my object was to reduce capital expenditure as much as possible, and I believe this to have been successfully accomplished.

The prominent features of the work to which attention may be drawn are:

The use of concrete blocks, dispensing with all timber framing.

The coating with "Ironite" to render concrete gas-tight.

The use of timber for bearing bars in place of steel, which rapidly deteriorates through contact with oxide of iron.

The type of wood grids adopted for use, and jointing all connections with the tallow joint.

MILITARY ENGINEERING AND THE WAR.

America is bestirring itself in the matter of national defence. The four national engineering societies of the United States, realising the national need for technically trained men to be at call for war service, organised a military lecture course which engineers were invited to attend. About three thousand engineers responded, and the lectures were given in three separate sessions each week. In extension of this movement, the "Engineering Record," of New York, invited Major P. S. Bond, of the Corps of Engineers of the United States Army, to write a series of articles on the same subject. From the first of these we make the following extracts, in the belief that they will be serviceable at home:—

War to-day is one of the most highly developed of the sciences—the field of the expert and the professional. Preparation for defence is merely a form of national life or accident insurance.

The modern theory of war, as exemplified in the practice of the so-called military nations, is that all the resources of the state—moral, physical, and intellectual—should be at the disposal of the government. War is the most critical condition of the modern state, with its highly developed and peculiarly sensitive and vulnerable industrial and commercial systems. For the successful prosecution of a conflict on which the very fate of the nation may depend, every ounce of its strength should be available. The aim is to strike quickly with all the force at the nation's command. That state is best prepared which can most rapidly bring to bear its resources in men and materials. In this modern theory is involved the principle that every able-bodied male citizen owes to the state the obligation of service. This principle is not incompatible with democratic ideals. The greater the benefits conferred by the Government, the greater the resulting obligation of the citizen.

The nearest approach to perfection in the application of this theory of war is exhibited by the German Empire. Whatever may be our personal sympathies (says Major Bond) we cannot withhold our admiration for the splendid efficiency of the German military machine and the complete mobilisation of the material resources of the Empire. The history of this state shows that the military system is the mother of the German Empire. Bismarck, the statesman, planned the greater Germany, but Von Moltke, the soldier, created it when he destroyed in two short campaigns the military power of Austria and France.

The German system, then, may be regarded as the most effective policy of national preparation for war, and it will be of interest to consider its principal features. In the first place the training of the personnel is what is known as universal, which is to say that it is applied to a very large proportion of the male inhabitants. In the second place, it is compulsory. In the third place it is regular. The standing army constitutes a school in which all men receive in their youth the regular training necessary to qualify them for field service, after which they are passed to the reserves and allowed to pursue the vocations of civil life, being occasionally called out for short periods of training. They thus constitute a military asset until they reach the age of physical disability, but are not withdrawn from the pursuits of civil life.

This system of general training is supplemented and made effective by Governmental control of the material resources of the country, including the transportation, agricultural, and industrial systems, to the end that they may be instantly brought into efficient service in case of war. This mobilisation of the resources of the country is controlled by a large corps of highly trained officers, known as the Great General Staff. Such, in brief, is the German system, which exemplifies the modern theory, hereinbefore referred to, that all the resources of the State—moral, physical, and intellectual—should be at the immediate disposal of the Government for use in case of war. Such a system is most effectual under a highly centralised, indeed a despotic, form of Government. But it is not limited to such, inasmuch as France, a Republic, has adopted and carried out practically the same system as Germany. On the other hand, China, hitherto and possibly again to be one of the most despotic of Governments, has no military policy whatever, unless peace at any price may be so called.

The proportion of engineer troops with an army in the field which experience indicates to be correct is from 1-40 to 1-16. It is safe to say that no army has ever had

an excess of engineer troops. The demands upon them have invariably been greater than their capacity.

Napoleon is credited with the statement that he would rather have an army of lambs commanded by lions than an army of lions commanded by lambs. This truth will be almost self-evident, and it is especially applicable to engineer troops, on account of the variety of their duties. To obtain trained officers is more difficult than to obtain trained troops, since the time and effort required to fit officers for the performance of their duties is greater than the case of enlisted men. The officers of this engineer force are accordingly of chief concern.

An officer to command engineer troops should have the following qualifications:

It is essential that he have a good constitution, able to withstand the hardships of a campaign. He should be a man of high professional qualifications, both as a soldier and as an engineer. Without such qualifications an engineer officer cannot properly plan nor execute the varied work that will be assigned to him, nor properly subordinate his work to the needs of the combatant forces; he cannot command with respect and confidence of his own men, and cannot, consequently, maintain discipline. He should be zealous in the performance of his duty—which ordinarily implies interest in his work—resourceful, and, but not least, a student of human nature, knowing how to handle men so as to produce the best results under trying circumstances.

It is essential to provide for a large reserve of at least partially trained men. The time required to train the officers will be greater than in the case of the men, and accordingly special attention must be devoted to the peace training of the men whom we must rely to furnish officers. The officer of engineers must be not only a trained and disciplined soldier, but in addition a competent and experienced engineer. In other words, he must have training along two lines to fit him for the discharge of his duties. It is not sufficient that he be instructed merely in the tech-



DESTRUCTION OF A STEEL BRIDGE ACROSS THE VISTULA AND REPLACEMENT BY PONTOON BRIDGE: A TYPICAL MILITARY ENGINEERING PROBLEM.

details of his work. He must have tactical sense so developed as to be able grasp the situation of the moment and intelligently bend his energies to meet it in a suitable works. This means that the engineer officer could not be brought to the state of efficiency in his own lines as quickly as the infantry officer, unless he has previous training and experience in engineering. The engineers taking the field should all be trained to a certain minimum standard of efficiency. Otherwise, efficient infantry would be severely handicapped by being forced to depend on inefficient engineers. If this necessary condition is to be realised, it is evident that we must obtain our volunteer engineer officers from a class of men having previous training along engineering and construction lines. The nation, then, depends upon the engineering and contract professions to furnish these men.

Military engineering in a general sense is the adaptation of civil engineering to the conduct of war. It is a special application of the engineering art, and its methods and economics are essentially different from those which characterise good civil practice. Major Bond enquires into the relation of engineering to the conduct of war, the methods characteristic of military engineering, to the end that the civil engineers and contractors of the country may specially prepare themselves in advance for patriotic duty which they may be called on to perform.

There is no science known to mankind, in astronomy to bacteriology, which we do not find its application in the conduct of war. There is scarcely a practitioner or a man who may not contribute his share to the national defence. Even the clergyman and the musician, the exponents of art on earth and the gentlest of the arts, are called upon. Thus do we obtain a true conception of the theory that all the intellectual resources of the nation should be at the command of the Government in the prosecution of a war on which the fate of the nation may depend. Of the useful arts that contribute the results of their research and practice to the successful prosecution of war, none is of more importance than engineering.

The duty of the military engineer in time of war is to plan and execute all works of engineering nature which are required in connection with the operations of the army. It will be apparent that this is a wide field of endeavour. The engineering requirements of an army include most of those of the average large community, and in addition many others not called for by the gentle vocations of peace. The military engineer must have, therefore, a thorough working knowledge of the more important branches of civil, mechanical, and electrical engineering as applied to military needs. This might appear to be more than an average man could be expected to know, and so it would be did we demand of the military engineer all the precision and nicety characteristic of civil practice. Military engineering, in rather sharp contrast to good civil practice, is characterised by makeshifts and temporary expedients. "Build for posterity," says the civil engineer. He places the foundations of his bridge at great expense of time and labour on the solid rock, and he has a pride in the enduring nature of the structure he erects. In his brain is the accumulated knowledge of centuries of painstaking construction. Long after his work the great bridge remains, a monument to his skill and devotion. How different is the case of the military engineer. He builds for posterity, but for the emergency of the moment. Not on the solid

rock does he place his foundation, but often on the heaving bosom of the stream itself. The army arrives at the impassable stream, and the engineer rapidly scans the situation. In his brain also is the accumulated knowledge of centuries of scientific warfare. Aladdin's lamp is rubbed. And lo! in the twinkling of an eye the wonderful bridge is there and the army with all its animals and heavy vehicles proceeds across. To the frail but still adequate structure are committed not only the lives of the troops, but the destinies of the nation perhaps.

The military engineer must possess not only a thorough knowledge of construction, but also a thorough knowledge of the art of warfare. He must foresee the needs of the army, and build to meet those needs, and on his sagacity, energy, foresight, and resourcefulness the issue of the campaign may indeed depend.

No description is given of the illustrations to Major Bond's first article. The view here reproduced (p. 136) is to a great extent self-explanatory.

Impervious Concrete Tanks.

With all tanks constructed to contain liquids, the importance of an impervious concrete cannot be too greatly insisted upon. We learn that a tank on Lord Donoughmore's estate at Knocklofty, Clonmel, was constructed with Puddled cement concrete two years ago. Upon a recent examination it appears to be in a perfect condition. It had been subjected to a severe test in the interim.

American Cement.

H.M. Consul-General at Chicago reports that, according to an estimate of the output of Portland cement in the United States in 1915, made by the United States Geological Survey, the production was about 85,732,000 barrels (of 380 lb. net), as compared with 88,230,170 barrels in 1914, a decrease of 2.8 per cent. The stocks of finished cement at the mills showed a decrease of 10.2 per cent. The slight decrease in production and the considerable decrease in stock indicate a greater caution in the industry, which in the preceding few years showed a tendency towards over-production. The general prices average a few cents lower per barrel in 1915 than in 1914, although towards the end of the year they were considerably higher. The outlook for 1916 is stated to be brighter than for several years.

CONCRETE FOUNDATIONS OF AN OIL-STORAGE TANK.

The accompanying illustration shows the foundation of a thirty thousand barrel oil storage tank at the Grand Trunk Pacific Railway wharf at Vancouver, for the Imperial Oil Company, Ltd. The placing of the concrete was handled in a very economical manner, as described below.

After the piling was all completed, the hoisting tower was erected, and the hoist motor put in place. The sheave supporting beams were made longer than usual, and temporarily placed on the top of the tower and allowed to project over the mixer platform; the mixer and its motor were then hoisted in a few minutes by the hoist motor. The height of the mixer platform was so arranged that when the form-work for the fire wall was completed the mixer was at the correct height for discharging direct into buggies, at the same time it was of sufficient height to spout the concrete for the tank foundation, which is 2 in. thick. The tower was placed just over the outer edge of the wharf, so that the hoisting skip can be lowered to suit any stage of the 12-ft. tide. The scow was brought direct from the gravel pit, and on it was placed the cement which was received from the cement boat, which brought cement straight from the cement mills. The correct amount of aggregate and two sacks of cement was then dumped by wheelbarrows into the hoisting skip, which was hoisted and discharged into the mixer.

The specifications for the material for the foundation slab called for a mixture of 1-3-5. By measurement it was found that 3 cub. ft. of sand and 5 cub. ft. of gravel, when thoroughly mixed, measured 7 cub. ft. At the gravel pit the correct amount of gravel and sand were discharged from different hoppers on to a belt, and loaded on the scow. Care was taken, with the result that the material was very evenly mixed. The result of having the material mixed at the pit was that it was much more easily handled at the job, and also one yard of mixed material equals one and one-seventh yards of separated material. From the above description it will be noticed that the only plant used was the hoist mixer, which is an important consideration when only handling a thousand yards of material. The contractors were the Dominion Construction Company, Ltd., Vancouver.



CONCRETE PILE FOUNDATION FOR OIL TANK.

CONCRETE AGGREGATE FROM CLAY.

R. W. (Derby) writes: "We understand that in some parts of the country it is customary to burn clay for the purpose of producing clinker for concrete. Can you give us any particulars as to the method, and the approximate cost per yard cube?"

—In some districts where clay is abundant and gravel is scarce, it is often difficult for the contractor to find suitable aggregate with which to make the concrete required for a given piece of work. Knowing that broken bricks make an excellent aggregate for the purpose, several American engineers have ingeniously burned clay specially for the purpose of making such an aggregate, with entirely satisfactory results. If the material is properly prepared, and sufficiently large quantities are required to warrant the cost of preparation, it is clear that the burning of clay found in the locality may often prove better than a gravel which has been brought from a distance, and, in addition to its other properties, burned clay has specially valuable characteristics as an ingredient of concrete which are largely overlooked by those engineers and contractors who confine their attention to the purely engineering side of the question. It was one of the great secrets of the ancient Romans that the use of fine brick dust in their cement and mortar gave their structures that permanence which is our wonder to-day. Without going deeply into the subject, we may simply say that the brick dust combines chemically with the lime set free when water is added to the Portland cement, and forms an additional cement as well as preventing the lime from being washed out of the concrete and so making the latter porous. There can be little doubt that the best form of burned clay for concrete is clean broken brick, reduced to a suitable size in a jaw crusher, but where this is not available a good substitute may be found in clay which has been burned specially for the purpose. The amount of burning required depends on the particular clay used—some marls will melt into a slag at a temperature which is too low to burn a fireclay or shale—and the engineer must therefore make some tests before he can decide on the temperature required. Much may be done by the aid of a neighbouring brickyard and a study of the goods manufactured there. Generally speaking, the clay for concrete should be at least as well burned as the average bricks in the locality. Underburning is serious, as it produces a soft and friable material which may prove disastrous under a heavy load. Overburning, on the contrary, produces a kind of clinker which is extremely difficult to crush, and is thereby made unnecessarily costly. The very best method of burning the clay is to make it into rough bricks, set these in a brick kiln, burn them, and then crush them to the required size. This process is costly, and involves a considerable expenditure on plant, drying places, and kilns, or, if capital is saved in this way, the process becomes so slow as to be impracticable for more than about a million bricks. In favourable circumstances, and with the clay on the site of the building, it is possible to put down a machine, dryer, and kiln for about £4,000, which would produce the equivalent of five million bricks per annum. This capital expenditure would not be recouped unless 20,000 to 30,000 tons of clay, corresponding to about 15,000 cubic yards of concrete, were required. One such plant was erected in Lancashire and proved quite

satisfactory on a job requiring the removal of 60,000 cubic yards of clay from a site and its utilisation on the spot in some form, as there were no facilities for tipping within several miles. The actual cost worked out at 4s. per cube yard for the broken material, but it is only fair to say that against this should be set a heavy charge for cartage and tipping, which would have been necessary if the clay had not been converted into bricks of a rough character. A method which has been used in the United States consists in burning the clay in the same manner as lime is burned in a kiln. The clay is dug out in lumps, which are allowed to dry, and these lumps are then placed in a lime kiln in alternate layers with coal. As the coal burns away the clay falls downwards and is raked out at the bottom of the kiln, a new charge being placed in at the top as required. It is difficult to compare American with English costs, but this process in England in pre-war times would apparently cost about 1s. 6d. to 2s. 6d. per cubic yard of material out of the kiln. This material would require to be screened and some of it crushed. Another process used by some American highway engineers consists in digging trenches in the clay, filling them with brushwood, and covering with clay. This crude method produces too soft a material to be satisfactory for great loads, but is good for light road traffic.

A. B. SEARLE.

TRADE AND CRAFT.

A Coke Stove for Industrial Heating.

In workshops an equable temperature is a matter of high importance. It is essential to the health and comfort of the workers and to their efficient performance of their tasks, and it may be equally necessary to the smooth working of delicate machinery, and to the handling of materials and processes that would be seriously affected by abnormal conditions of atmosphere. Messrs. Alfred Herbert, Ltd., of Coventry, have produced a coke stove that is specially designed to render this service in machine shops, foundries, warehouses, stores, or sheds, where steam cannot conveniently be used. Easy to fix, and occupying what may be regarded as an irreducible minimum of floor space, these stoves give forth a great amount of heat with but little con-

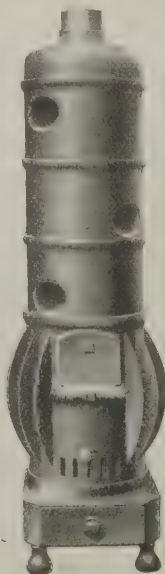
sumption of fuel. They need very little attention, and will burn coke, breeze, and any kind of rubbish that is at all combustible. Comprised in the stove proper are the feeding door, regulating ventilator, and removable ash-pan. Above this may be fitted as many hot-air chambers as are desired, three being usually sufficient. The chambers contain oblique passages through which the hot air flows, thus distributing the heat over a wide area. A chimney carried through the roof or wall is not absolutely necessary, but is desirable to clear off the smoke generated in firing. In places where these fumes would be objectionable. Two sizes of stoves are stocked. In the smaller the diameters are: stove 19 in.; hot-air chambers, 13¾ in.; chimney opening, 5 in.; the over-all height 5 ft. 5 in. In the larger size, the respective measurements, taken in the above order, are: 21 in., 16 in., 5 in., and 5 ft. 10 in. These stoves meet admirably the present pressing demand for efficiency with economy in the equipment of workshops and factories.

Motor Trade Association's New President.

At the annual general meeting of Motor Trade Association, held at offices in Great Portland Street, W., March 23, Mr. Arthur Goodwin, Messrs. C. A. Vandervell and Co., Ltd., was unanimously elected president for ensuing year. For many years past Mr. Goodwin has held the important position of manager to Mr. Vandervell in the building-up of the great firm at Acton known as the "C.A.V.," pioneers of electric lighting and starting for motor cars. Born near Colchester, and educated at Grammar School there, Mr. Goodwin intended for the engineering profession but was attracted to the cycle trade by the great trade boom then existing, and remained in it until the commencement of the motor-car industry in 1896. He is now on the council of the Society of Motor Manufacturers and Traders and a member of their Management Committee, and always taken the keenest interest and devoted much time to the work of M.T.A., the organisation that has done much for the protection of the motor trade.

Proposed Association of Master Painters and Allied Trades.

A meeting will be held on Thursday, March 30, at 7.45, at Limes Hall, Little Grove, High Street, Lewisham, and another on the following day, Friday, March 31, at the same time, at Croydon Public Hall, George Street, Croydon, the object of forming local associations of master painters, decorators, and kindred trades for the districts of Lewisham, Deptford, Greenwich, Catford, Forest Hill, Ladywell, Hither Green, Lee, Blackheath, Brockley, and New Cross, and also the districts of Croydon, Thornton Heath, Vauxhall, Sutton, Carshalton, Hackbridge, Wallington, Beddington, Purley, Addiscombe, etc. Every employing painter, builder, etc., is earnestly requested to attend. The speakers will include several gentlemen representing the National Association of Master House Painters and Decorators, and others representing the London Association of Master Decorators. Tickets of admission may be obtained from Mr. Arthur S. Jennings, editor of "Decorator," 365, Birkbeck Bank Chambers, High Holborn, London, W.C.



MESSRS. HERBERT'S COKE STOVE.

THE ARCHITECTS' & BUILDERS' JOURNAL.

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GLAMORGAN COUNTY HALL, CARDIFF: SCULPTURE ON PIER.

BY ALBERT HODGE.

THE ARCHITECTS' & BUILDERS' JOURNAL.

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TOTHILL STREET, WESTMINSTER.

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EDITORIAL.

SHORTLY after the outbreak of the war, certain premature suggestions for abandoning the use of Austrian oak brought forth a justly indignant remonstrance from dealers in that material. British importers, it appeared, had on hand large stocks of Austrian oak which had been paid for in good British money. Was that investment to be written off as a very considerable loss to inoffensive British traders, and should we deprive ourselves of the use of a large supply of excellent material, merely to gratify our very natural animosity against the enemy? That would be to confer a positive advantage on the enemy at the expense of our compatriots; for clearly the balance on the business transaction would be in the enemy's favour—unless, indeed, not to be outdone by us in sheer childishness, he refuses the use of English money because we jib at Austrian oak. It is not easy to visualise him in an act of self-denial that would be no whit more fatuous than our deliberate abandonment of the money's worth in timber.

* * * *

This aspect of the question cannot have been dispassionately considered by the correspondent of a Cheltenham newspaper who has written to protest against the use of Austrian oak in recent alterations to the interior of Trinity Church, Cheltenham. Its employment, he says, "must jar the minds of all patriotic people," and he adds that "however fitting the Austrian oak may be for that particular kind of work, English, Russian, or Japanese oaks are equal in quality and appearance to that of our enemy's production." This, as we have demonstrated, is only a very superficial patriotism, hardly distinguishable from unreasonable prejudice. If we were really importing the stuff, and thereby benefiting the enemy, there would be some sense in protesting. As it is, the protesting patriot shoots his arrow over the house and hits his brother—a "mark the archer little meant." It will be time enough to protest against the continued use of Austrian oak when further importations become imminent, and when it can be proved that efficient substitutes are procurable. In the name of common sense, let us not begin to holloa before we are "out of the wood"! Really it ought not to be necessary to state categorically that our quarrel is not against Austrian oak *per se*, nor against its British importers, but against its producers, and not even against them as growers of oak! By all means let us be sincerely and fervently patriotic, but let us not give occasion to the enemy to accuse us that we are wooden in it.

* * * *

In dealing with the subject of materials, we are reminded of a complaint that has been addressed to us by manufacturers. It refers to a growing habit

of Government departments naming specifically, their publications relating to building, certain proprietary articles or materials, thus giving the official sanction and approval. This practice, it is contended, sets up an unfair preference for the articles named, and—what is perhaps worse—unfair prejudice against articles or materials of the same class that are ignored. When, for a given service, there are available a dozen or a score of proprietary articles of approximately equal merit and renown, to set the seal of official sanction capriciously on two or three of them is manifestly unfair to the rest, which in a manner are made to pay for this splendid advertisement of their competitors. We are quite sure that this effect is wholly unintentional on the part of the Government Departments concerned. Let it be clearly understood that they cannot be for a moment suspected of any intention beyond that of rendering more practical and definite the guidance they offer; and we cannot doubt that when their attention is drawn, with all courtesy, to the fact that this object is being unwittingly attained at the expense of the strict impartiality that traders have a right to expect from them, they will make haste to abandon the practice.

* * * *

Government Departments, or Committees, have been of late rather unfortunate in their publications. If they really must go on issuing treatises on building construction, it would be mere prudence to appoint an architectural editor. A recently issued "Appendix to Memorandum No. 3" on "Canteen Construction and Equipment" is made the occasion of sarcasm by Mr. S. E. Flack, who, in a letter to the "Glasgow Herald," cites samples in proof of the proposition that the "Appendix" is "a particularly futile publication." According to Mr. Flack, it revealed to us in the document that "permanent buildings take longer to erect than temporary buildings, and that sinks are required for the use of the cook in the preparation of food." "Some space," he says, "is devoted to the discussion of a colour scheme for the walls, as it is evidently of so much importance whether Irish stew is consumed in an atmosphere of primrose or duck's-egg green. The cooking can be carried out by electricity, gas, coal, and I suggest, when these things are not available, tallow candles or matches might be usefully employed. It is specially useful to know that knives and forks are required, also that the spoons should be seven inches in length, and that tumblers should have a liquid capacity of thirty ounces." Mr. Flack adds: "It is not surprising that there is a shortage of paper pulp when such documents are published broadcast, but there is, of course, the satisfaction of knowing that at least

...nting trade will not lack work whilst the Committee in question is investigating such serious problems, and casting such pearls of wisdom to the common people."

If the sarcasm is a little crude, in that respect it catches the matter. With what object is the memorandum so meticulous? Surely it must have been prepared on the assumption that canteens would be, in instances sufficiently numerous to be taken into consideration, constructed and equipped by, or under the supervision of, persons totally ignorant of the rudiments of the undertaking. This, in war time, may be an exigency of the remoter camp or order, and the Committee would no doubt be justified in a rational attempt to meet it. While this reflection robs Mr. Flack's sarcasm of some of its sting with respect to this particular document, we are left with the uneasy feeling that other official publications on design and construction have shown much the same tender regard for ignorance, without the same excuse.

Occasions of referring to any of the fine halls of London City companies are too rare to be willingly missed. Last week the Lord Mayor "inaugurated the use" of the extended hall and court-room of the Painter-Stainers' Company in Little Trinity Lane. It would be interesting to know upon what evidence the carved entrance doorway is generally attributed to Wren and Grinling Gibbons. If it is indeed theirs, it is not in the best manner of either architect or the carver. Both in the general design and in the details one misses the serene inevitableness of those masters; who, however, being human, could on occasion be less noble than themselves. Of course, the company is much older than its present hall, the guild or fraternity of Painter-Stainers having been formed some time before 1580, when it obtained a charter of incorporation. It imposed fines, for infringement of its guild privileges, on Gentileschi, Steenwyck, and other sculptors imported by the Crown, but Court protection enabled the foreigners to defy the guild.

Benjamin Jones, Vandyck, Reynolds, and Boswell are said to have been guests at the Painter-Stainers' annual feasts, and Cornelius Jansen, Sir Godfrey Kneller, and William Camden the antiquary, were closely associated with the company. Two of Kneller's paintings are included in the interesting collection in the hall, where there is also a portrait of Camden as Clarencieux King-at-Arms. In the recent extension of the hall, the musicians' gallery has been moved from the middle of the east wall to the corner of the room. No doubt this change was inevitable, but it is not the less regrettable, as its original situation is more than half the charm of a musicians' gallery; but one is too grateful for its preservation to grumble at its position. Speaking of its attitude, it should not be forgotten that the company has an excellent record for generous support of technical education. In particular, its travelling studentships have done much for the uplifting of the craftsmanship with which the company is identified.

Last week we had occasion to refer to the question of lady architects. Since then, the lady bricklayer has arrived. She has been caught in the act and photographed, trowel in hand, for the "Daily Mirror." She is at work somewhere in Hampshire, or possibly elsewhere, since it appears that, in accordance with a recent edict, all the males of the species have been commandeered for Government work. She has, it is said, easily acquired the knack,

but it is devoutly and confidently believed that she will never acquire the vernacular of the craft, nor its habit of making a too practical application of the beautiful theory of the conservation of energy—"ca' canny" the wise it call. Henceforth, any reiteration of the statement that "Balbus built the wall" will raise a question as to the validity of the masculine termination. But the incursion of the lady bricklayer should make straight the paths for the lady architect; in the which Elysian conditions, the antiquated formula, "Here comes the architect: drop a brickbat on his head," will lose its dramatic significance and dynamic force. On the other hand, fresh vitality is infused into the old grammar-book tag, "Common are to either sex 'Artifex' and 'Opifex.'"

At the third reading, in the House of Lords, of the railway company's Bill relating to the strengthening of the Charing Cross railway bridge, the Earl of Plymouth moved an instruction to the committee to whom the Bill will be referred "to take into consideration the requirements of the traffic over the river at Charing Cross and the effect which the Bill will have upon them, and to hear evidence from the Royal Institute of British Architects, the London Society, and others, on the treatment generally of the very important part of London affected." Viscount Chilston said the promoters of the Bill "would welcome any assistance that could be given them in beautifying the structure," and the instruction was agreed to. This complacency is very winsome, but it is not apparent that beautification must necessarily ensue. To beautify the existing bridge is a task that would drive a Michelangelo to despair. Nothing short of reconstruction to a new design could be reasonably expected to secure anything like the desired result, and the times are not propitious for the "treatment generally" that Lord Plymouth suggested. It is plain, therefore, that the societies intervening in the interests of art are confronted with a thankless task. They are, indeed, in a dilemma: either they must advocate without hope of success a radical remedy, or, alternatively, they will be adroitly made to share the responsibility for tinkering measures.

FOR MEN AT THE FRONT.

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AS everyone knows, our men at the Front are eager to read any kind of literature other than that relating to the War, and we are sure that the architects among the Forces abroad would be very glad if they could receive regularly a copy of this Journal, in order that they might keep in touch with what is going on at home in connection with the profession they have so patriotically relinquished in order to fight for their country. We ourselves are unable to get into touch with them, for the simple reason that we cannot ascertain the detailed indication of their regiments, but readers who are still at home and are in communication with them are in a position to meet the difficulty, and we therefore suggest to them that when writing to men with the Armies in France or elsewhere abroad they should enclose this announcement—that we are prepared to send out the Journal to men at the Front week by week for six months, for the special reduced subscription of 7s. 6d. post free.

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27-29, Tothill Street,
Westminster.

HERE AND THERE.

THAT interesting little discussion about skyscrapers in general and the Woolworth Building in particular, which was broken off last week for want of space, may now be concluded. It will be remembered that the Master Builder, the Engineer, and the Editor were on the roof of the Astor, comfortably colloquial after dining luxuriously beneath the stars. "The system of tendering seems to be rather unique," said the Engineer. "The builders guaranteed the owner that the building would not cost more than a certain amount, provided the plans were not altered, and they charged a fee of ten per cent. on the actual cost, allowing the owner the advantage of all discounts and savings. In this case the plans were considerably altered after the signing of the contract, which increased the work considerably." "I can explain that," said the Editor. "Three designs were prepared, and finally the third was adopted, which widened the original area and increased the height of the structure. The work was finished so swiftly that European engineering authorities did not consider it possible; in fact a German authority, the Munich Museum, ordered, at any cost, models of the structure at various stages. Yet it was not a triumph for the builders and the engineers. The man behind the



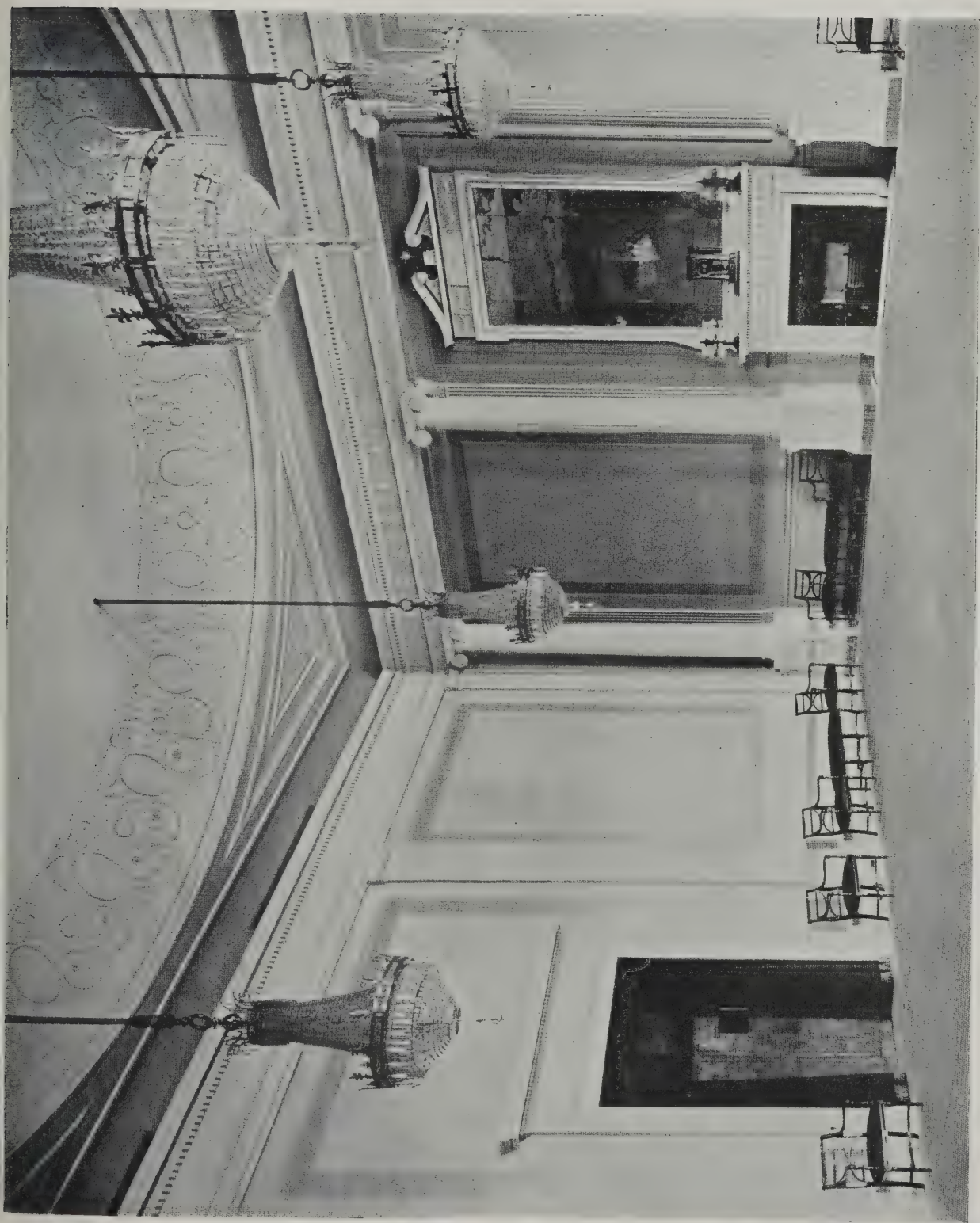
THE WOOLWORTH BUILDING, NEW YORK.
CASS GILBERT, ARCHITECT.

system had no professional training. The genius who directs the Thompson-Starrett organisation is a Polish Jew, Louis Horowitz, and his story, as I heard it, eclipses the interest that of the building of the Woolworth. When a lad, his application for admission to a Polish University was rejected because he was a Jew, so in 1880 when he was seventeen years old, he came to America without money or friends and almost ignorant of the language. He started in New Jersey as a cash boy in a shoe store at 12s. per week. Two years later he took charge of that store at £5 per week, but New York called him across the Hudson, and for three years he negotiated loans on real estate mortgages. In the third year he made £800 and bought a block of land in Brooklyn. He built a four-storey apartment house, borrowing two-thirds of the money on mortgage and selling the property, clearing a profit of over £600. Then he launched out into larger building enterprises until, in 1904, when twenty-seven years of age, he entered the service of the Thompson-Starrett Company as real estate adviser. Three years later he was general manager, and three years later he was elected president. Under his jurisdiction the company rose to be the greatest building organisation in the world. During his term it not only built the tallest building in the shortest time, at the lowest cost, but also built the McAlpin Hotel, the largest hotel in the world, at a cost of £1,400,000, the Continental Bazaar at Chicago for £1,400,000, the Hotel Arlington in Washington for £900,000, as well as other important works, including the New York City Hall, at a cost of £2,000,000. And he is now directing the erection of the Equitable Building to cost £2,300,000: it will have the greatest rental floor space in any single building—and the man behind all this huge organisation is a plump little chap of forty years of age, without a wrinkle on his smooth boyish face. He said success was due to two things: organisation and—the square deal."

"What puzzles me," said the Editor, "is why the greatest of the Thompson and Starrett jobs are won in open tendering; that is, in competition with other building organisations; the lowest price of one against the lowest price of any other. That would be more in keeping with the American idea of business competition." "There's a risk," said the Master Builder. "The organisation would have gone to the trouble of making up its prices, working out problems and estimates, taking chances with weather and other conditions, and then would come the chance of another organisation offering a lower price to do the work. The lower price may have been reached, perhaps, by a miscalculation, but there is the genius of Louis Horowitz, the presiding genius of the Thompson-Starrett concern, doesn't take risks. 'Risks,' he says, 'are only made for gamblers, and I've never gambled in my life.' Horowitz gets in early and so cuts out the possibility of competition. The way he secured the job they are now doing will illustrate. It is the greatest contract they have ever tackled, that £2,300,000 for the Equitable Building. Some time ago the Equitable Building was burnt out. Whilst it was burning Horowitz went to the almost distracted president of the Equitable organisation. He came like a comforting angel. He offered to take charge of the situation. He was gratefully thanked and was asked to kindly do what he could. Almost before the ruins had cooled his men were clearing out the dead bodies and other debris and recovering the valuables from the awful wreck. Then Horowitz, having got in, brought all his real estate abilities to play and assisted in complete negotiations for a new site for the building. It was a real estate deal involving £6,000,000. Horowitz secured a quarter interest in the property."



MODERN AMERICAN ARCHITECTURE. XL.—MUNICIPAL BUILDING, HARTFORD, CONNECTICUT.
DAVIS AND BROOKS, ARCHITECTS.



MODERN AMERICAN ARCHITECTURE. XLI.—MUNICIPAL BUILDING, HARTFORD, CONNECTICUT: MAYOR'S RECEPTION ROOM.

DAVIS AND BROOKS, ARCHITECTS.

so froze off any opposition in connection with the building. The Thompson-Starrett people get jobs because they don't worry about 'chance.'"

* * * * *

The pilgrims went to the Equitable Building the afternoon. The great steel frame was already rising; hundreds of pneumatic hammers rattled machine-guns in the war against time. Suddenly electric bells clanged throughout the structure. It was order to "cease fire." The sudden silence that descended seemed strange and weird. It was pay day; thousands of workers of all nationalities began to pour out innumerable ladders and lift wells. Everything worked on a system. Each stream had its distinct destination and passed a separate pay window. The men handed in a metal tag and received in exchange a pay envelope and passed out. "Number one hundred and five," a checking clerk shouted. Each man was a numeral. Nationality or personal identity didn't count in the mechanism of American industry.

* * * * *

The architect who is already with the forces will have made the acquaintance of the drill sergeant, and will have come to regard the beautiful flow of military language as really the kindly expression of one who is intent on doing his best for King and Country. But it is hard for the raw recruit to think so. Surely, therefore, I am doing a pure act of kindness to those architects who are nearing their call to get down for them here the Kiplingesque record that I got from a soldier friend in France:—

Scene: A fiery drill sergeant with about twenty-years' service, a bristly moustache, and a voice like a steam trawler's foghorn. A squad of about twenty raw recruits, with one day's service, a vague respect for the powers of a drill sergeant, and a grudging manner of shuffling their weight on altered legs.

Drill Sergeant (after a few minutes of seemingly microscopic scrutiny of the latest lot of "rookies" to the Majesty's Forces): "Now you —— lot of loafers. Been living on the fat o' the land here, an' doin' jest as yer likes. Well y'are in the army now, and don't yer ferget it. Yer can't do as yer likes now. Yer in the Harmy now and yer does as yer likes. We tames —— lions in the Harmy, an' yer pretty sure to be able to tame you. (Pause to take breath, and to give time to let his words penetrate the thickest head.) "STAND HUP!" (Another pause to recover wind and to inwardly enjoy self-gratification that he is making an impression.) "Now h'im goin' ter make soldiers of yer all make yer fit ter wear the King's uniform, blast it. Now, when I says 'Shun!' yer brings the left foot smartly up to the right with a click o' the heels, at an angle of forty-five degrees, 'ands by the side of the trouser legs, thumbs to the seam, holding the head well up, chin well in, ches' thrown ter the front, shoulders square, balancin' the weight o' the body evenly on both legs, eyes looking straight to the front, ears well back." Momentary pause. "SHUN!!" (Pause of nervous recruit, and a look of disgust over spreads the choleric countenance of the sergeant. (N.B.—The sergeant will be obliged to accept a drink from that same nervous recruit when the canteen opens.)

Let the architect-recruit take heart, for these drill sergeants are, as a rule, very good fellows, and many of them as splendidly effective as Kipling's sergeant Whatisname in "making a man out of a stick" or of other material that is a great deal less effective in the moulding.

UBIQUE.

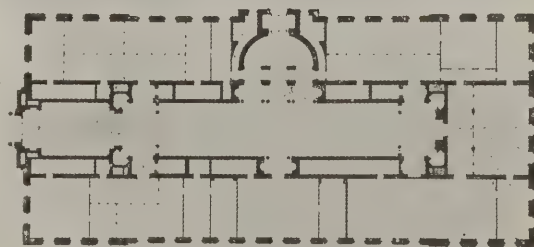
THE PLATES.

Municipal Building, Hartford.

THE new municipal building at Hartford is a representative example of the class of public building which is now being erected in the United States. The design was placed first in competition. The plan is a simple rectangle, with very slight architectural breaks, and is placed with the centre of its length in axial line with the centre of the Morgan building opposite, the space between being treated as a plaza bounded by grass plots having granite copings and being embellished with two granite fountains and ornamental light standards. Hartford is a Colonial town, with some very good Old Colonial architecture, and Messrs. Davis and Brooks, the architects of the new municipal building, have, very fittingly, returned to the Colonial style for inspiration for their work. The ground-floor storey is treated as a rusticated arcade over a strongly rusticated base, the upper storeys



atrium.



Ground-floor Plan.

MUNICIPAL BUILDING, HARTFORD, CONNECTICUT.

DAVIS AND BROOKS, ARCHITECTS.

being embraced by a Corinthian Order which appears as pilasters on the end pavilions, as engaged columns on the central pavilion of the main entrance façade, and as a delicately rusticated wall surface between the pavilions. Over all is a low attic. Within the building, offices are arranged along the outer walls, leaving a court or atrium in the centre which is architecturally treated and covered with a skylight. There are four entrances at the centre of each of the sides. From the first floor upwards the atrium is open, the circulation of the second floor being arranged over the vaults of the first floor in the form of an open gallery or promenade, while the circulation of the third floor is behind the arcaded walls of the atrium itself. This increase of width as the atrium ascends not only produces an agreeable effect of space and elegance in the interior, but corresponds to the diminishing width needed for the offices themselves on the upper floors. The whole is surmounted by a delicately ribbed ceiling, slightly segmental in form, and terminated at each end by segmental coffered vaults, in the tympanums of which are two large sculptural panels of local historical interest. Perhaps the pleasantest rooms in the building are the two court rooms, a city court and a probate court. Another successful apartment is the mayor's reception room, shown on the plate. This is an excellent example of Greek Revival work brought into harmony with the Colonial style. The familiar palmette and anthemion motif is used as decoration for the doorway and the frieze, and there is painted ornament on the cymatium. The mantelpiece in the room is surmounted by an old mirror and frame. The building is of masonry construction with brick bearing walls forming the atrium as well as the exterior. The floors are carried on steel beams and terra-cotta arches. The exterior is faced

with white granite, and the inside is plastered gypsum furring, which also forms the partition. The floors in the public portions of the building are finished with marble or tile, the floors of the offices being of cement covered with linoleum and rug. The roof is of fire-resisting construction, covered with copper and tile, and the large central skylight comprising more than 5,400 sq. ft., is of wrought glass; behind it are lamps and reflectors that produce an effect of daylight illumination.

A Paris Fountain.

This is perhaps the most charming little fountain in Paris. Its general form is simple and refined, and the enrichments are of just the right quality, and in just the right positions. We have not been able to ascertain the name of the architect, but assume that the fountain belongs to the late eighteenth or the early nineteenth century. The drawing reproduced is by Mr. F. Jenkins, from measurements by Mr. B. A. Miller—both of the Liverpool School of Architecture.

Gates at Burghley House.

Burghley House, Northamptonshire, was built in the latter part of the sixteenth century, but the gates illustrated are obviously of much later date. They belong to the Later Renaissance, and display all that elaboration of scroll and leaf work wrought iron which Tijou introduced into England.

Monument in S. Ignazio, Rome.

The Church of S. Ignazio, or St. Ignatius, Rome, was erected for the Jesuits, from the general designs of Grassi. The façade, however, is by Alessandro Algardi (1602-1654), who also executed the monument to St. Ignatius which we illustrate.



MUNICIPAL BUILDING, HARTFORD, CONNECTICUT: DETAIL OF SIDE ELEVATION.
DAVIS AND BROOKS, ARCHITECTS.



LA FONTAINE DU MARCHÉ
 SAINT-GERMAIN DES PRÉS, PARIS
 ONE INCH SCALE

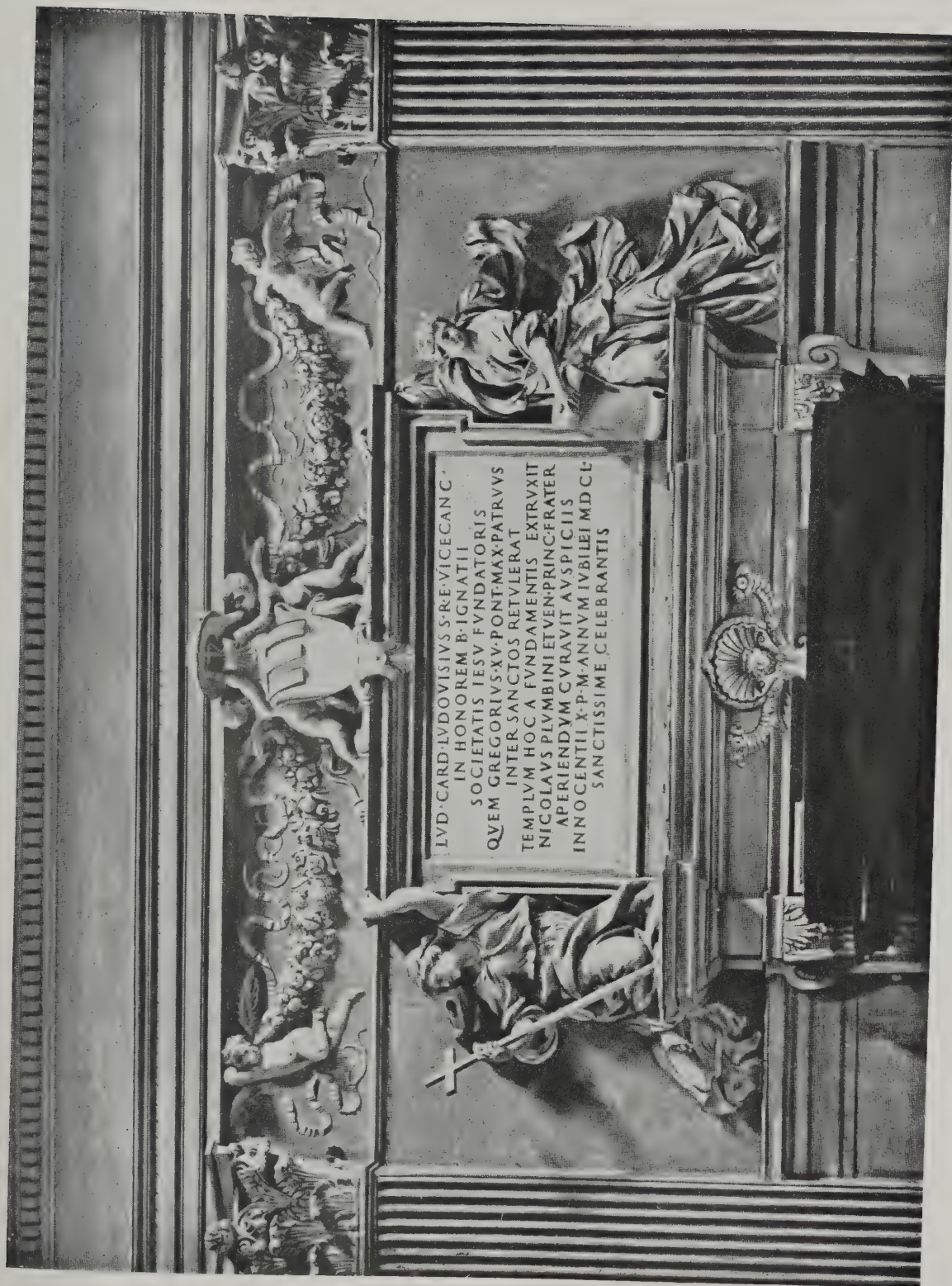
Fontaine du Marché
 P. A. MILLER, Nov. 1913

STUDENTS' DRAWINGS (SERIES II.).—XVIII.

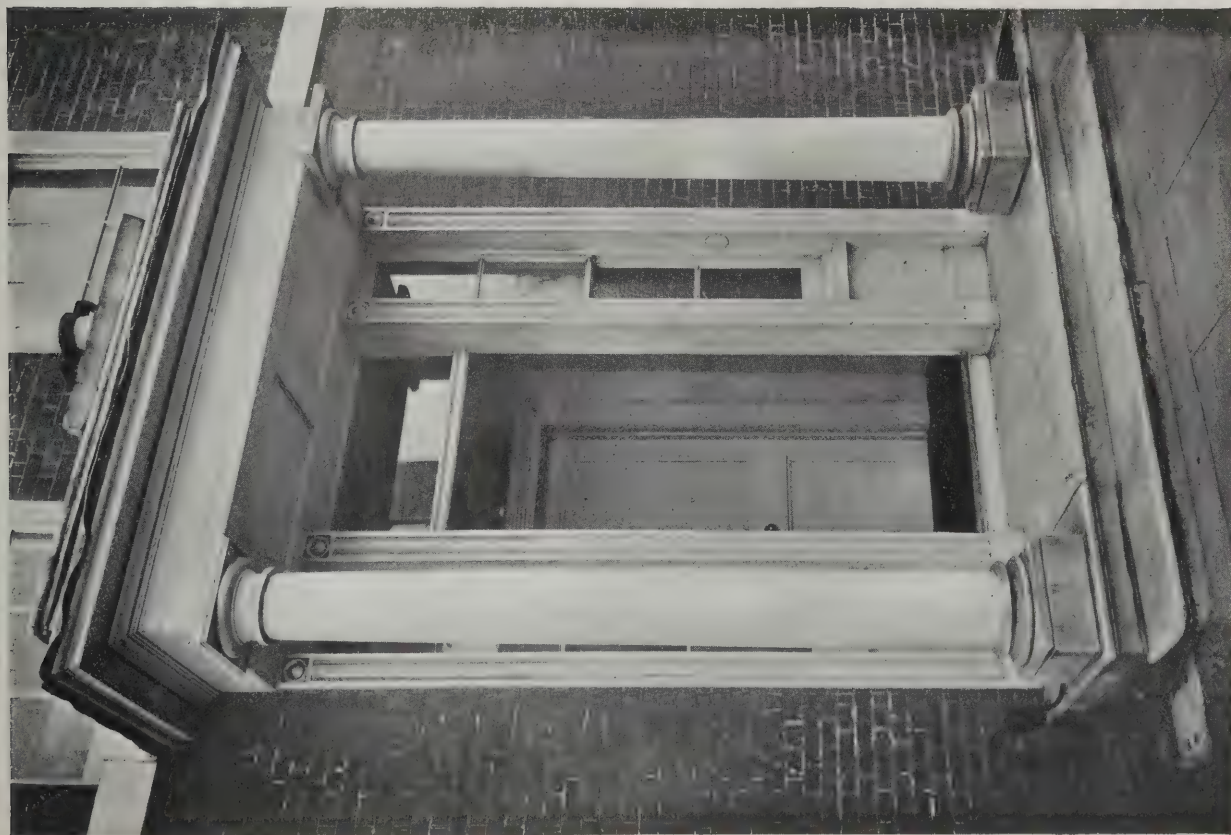
MEASURED BY B. A. MILLER. DRAWN BY F. JENKINS.



DETAILS OF CRAFTSMANSHIP (SERIES II.). V.—ENTRANCE GATES, BURGHLEY HOUSE, NORTHAMPTONSHIRE.



MONUMENTS. XIV.—WALL MONUMENT TO ST. IGNATIUS IN THE CHURCH DEDICATED TO HIM AT ROME.
 BY ALESSANDRO ALGARDI.

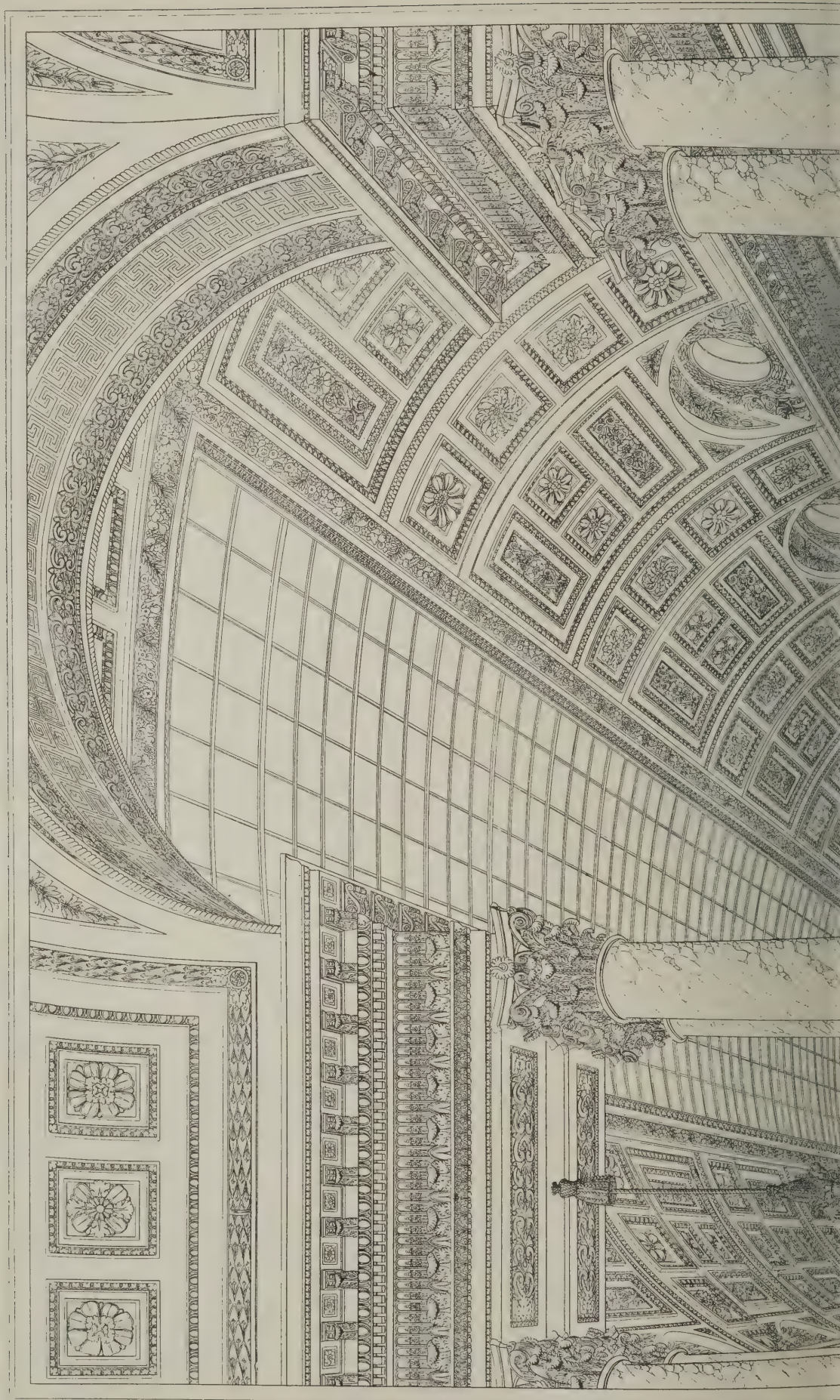


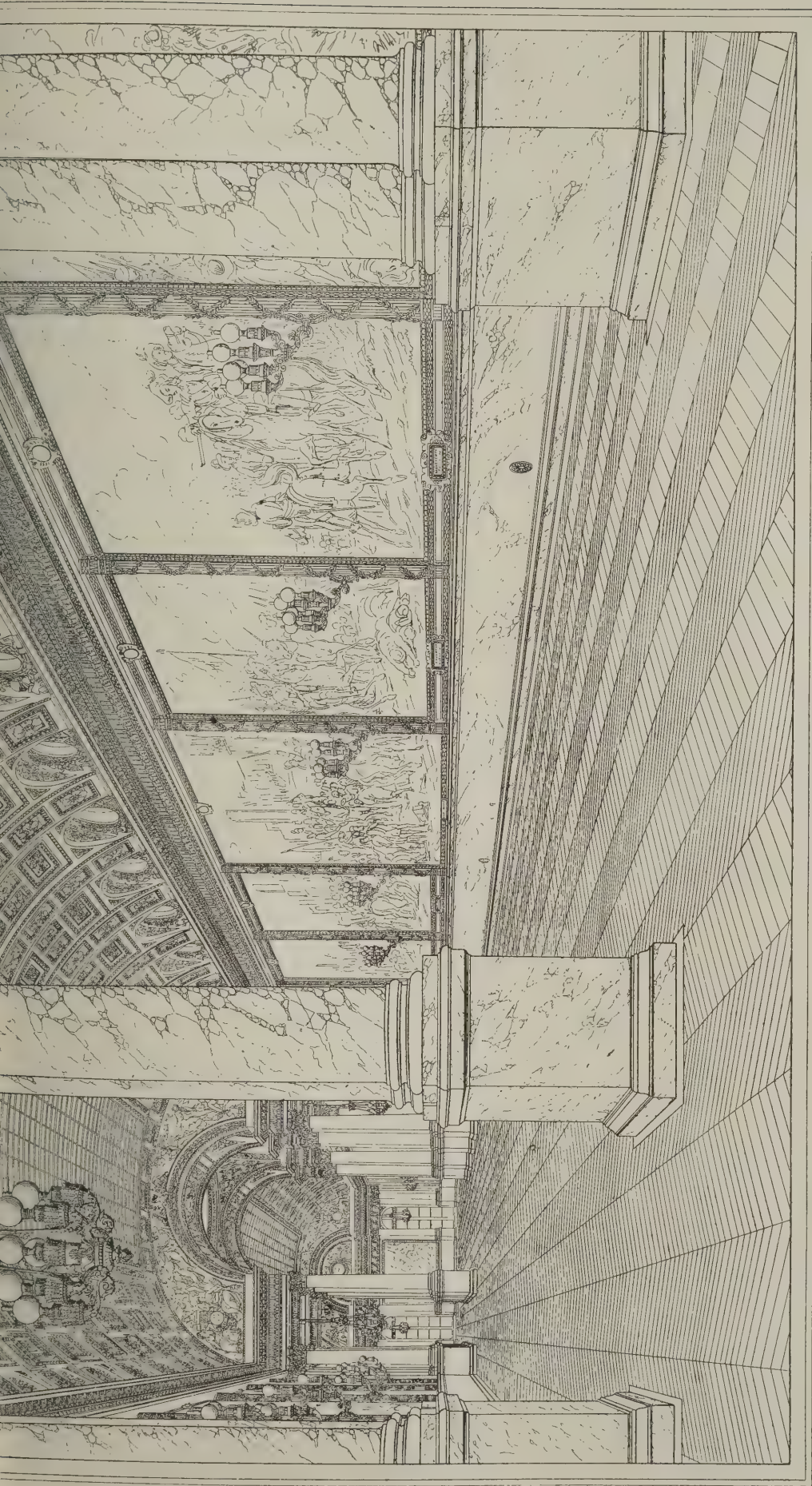
High Street, Marlow.



St. Peter's Street, St. Albans.

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MONUMENTAL ARCHITECTURE. XLVI.—THE GALLERY OF BATTLES, VERSAILLES.

JULES MANSART, ARCHITECT.

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rdi was a typical artist of the Italian Renaissance, inasmuch as he displayed facility alike in architecture and craftsmanship. As a sculptor he was particularly successful in his modelling of figures, as may be seen from the little figures in the frieze above this monument. The angels supporting the central panel are also notable for their sense of form and setting. Algardi's chief work is "St. Peter's Retreat from Rome," in St. Peter's.

Late Georgian Doorways.

In both of these doorways the use of reeded mouldings is predominant, especially in the doorway at St. James. It is a treatment that was much favoured by Soane and his school, and when not overdone gives most delicate and pleasing results.

Gallery of Battles, Versailles.

Of this magnificent gallery it may be said, with the same exactitude, that it is 396 ft. in length, 40 ft. in width, and contains a series of thirty-three paintings illustrating the chief events of the military history of France, from the earliest times down to the glorious days of the First Empire; thus, on the left there are pictures of battles from Clovis to Napoleon, while on the right Napoleon is the central figure. The paintings are by modern artists, Horace Vernet chief amongst them. It is interesting to note that this gallery was used by the Germans as a hospital in 1870-71. We much regret that an error has been made in ascribing the architectural design to Jules Mansart—an error which, fortunately, was not observed until the plate had been printed. The gallery occupies the place of a suite of royal apartments, and was carried out long after Mansart, having been constructed in the latter part of the nineteenth century under Louis Philippe.

CORRESPONDENCE.

Concrete Institute Report: Loads on Bridges.
The Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

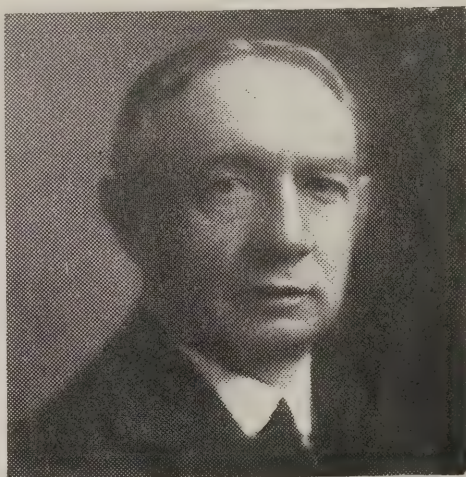
SIR,—A notion seems to have got into the Press, mentioned by one of the daily papers, that the draft report on the above subject had been drawn up without reference to military requirements; this appears in the remarks in your Journal of February 2, where you say, "As, however, the actual calculations will have to undergo a certain amount of alteration when, as is anticipated, the War Office gives its views on certain points, it would serve a useful purpose to go into this aspect of the report, quite apart from the fact that the recommendations are to be treated as confidential until the final decision is arrived at." It may interest your readers to know that the Committee ascertained at the commencement of their labours the probable loads that would be required by the military authorities, and on the 16th of the present month (March 16) the Director of Fortifications and Works, after considering the report, wrote, "the classification of proposals appear suitable to War Department requirements."

HENRY ADAMS, Chairman of Committee.
10, Queen Victoria Street, London, E.C.
March 29, 1916.

While welcoming the assurance conveyed in Professor Henry Adams's letter, we cannot agree with the passage he quotes will bear the interpretation he suggests. All that can be fairly inferred from the passage is that, very properly, the War Office authorities were being accorded full opportunities for revision, and that the final form was necessarily subject to that contingency.—EDS. A. B. J.]

A NEW ARCHITECT "A.R.S.A."

MR. JAMES A. MORRIS, F.R.I.B.A., F.S.A.-Scot., has just been elected an Associate of the Royal Scottish Academy. Born in 1857, he received his training at the Ayr Academy, the Glasgow School of Art, the Royal Academy Schools, the Slade School, and University College, London. He commenced practice in 1881 at Ayr. His works include the Art Schools at Ayr Academy, St. Ninian's Episcopal Church at Troon, St. John's at Wallacetown, Hinton House in Northamptonshire, Conheath House and private chapel in Dumfriesshire, and Savoy Park, Ayr. Mr. Morris has also done important preservative work—for example, at Crosraguel Abbey, to the Old Brig of Ayr, at Greenan Castle, and to the Memorial Gateway at Girvan. To church and domestic furnishings, and craftsmen's work, he has devoted much study. He is a member of the Art Workers' Guild of London, as well as of the Glasgow Art Club, and has served on the councils of the Scottish Society of Art Workers and the Glasgow Institute of Architects. For the accompanying illustration we are indebted to "The Bulletin," of Glasgow.



MR. JAMES A. MORRIS, F.R.I.B.A., A.R.S.A.

While referring to Mr. Morris's election as an "A.R.S.A." it is opportune to mention that on the "active list" of the thirty Royal Scottish Academicians there are only four architects—Mr. Hippolyte J. Blanc (who is the treasurer), Mr. George Washington Browne, Sir John Burnet, and Mr. John Kinross; and the Associates (there are now thirty-five or so, but the number is not arbitrarily limited, include only five—Sir Robert Lorimer, Mr. A. Marshall Mackenzie, Mr. James Miller, Mr. David Robertson, and now Mr. James A. Morris. Sir Rowand Anderson is an honorary member.

Founded in 1826, the Academy was reconstituted in 1830, and received in 1838 its Royal Charter, which requires it to hold an annual exhibition and to undertake certain teaching functions. Revised charters were granted in 1891 and 1895. Academicians and Associates are elected by the combined orders, vacancies in the former rank occurring before December 31 being filled up on the second Wednesday of the following February, while Associates are elected on the third Wednesday in March. A council consisting of the president, secretary, treasurer, and six academicians governs the Academy, which, since 1911, has been quartered in one of the two fine adjacent buildings in Princes Street, Edinburgh, designed in the Grecian mode by W. H. Playfair.

LEGAL.

Building By-Laws: Right to Remove Building.*Andrews v. The Wirrall R.D.C. and another.*

March 18. Court of Appeal. Before the Master of the Rolls, Lord Justice Warrington, and Mr. Justice Scrutton.

This was an application by the defendants for judgment or new trial on appeal from verdict and judgment at trial before Mr. Justice Atkin. (See our issue of July 28, 1915, p. 41.)

The action concerned the local council's right to remove a bungalow from a field and destroy it. The plaintiff, Mr. Arthur Andrews, sued the Wirrall R.D.C. and Mr. Wm. Shennan, their surveyor, for damages for wrongfully seizing and destroying a van belonging to the plaintiff. The defendants said that the object was a building within the meaning of the Public Health Act, 1875, and their by-laws, and this having been constructed contrary to the provisions of the by-laws, they were entitled, under their powers, to destroy the building. It was a bungalow constructed in a field in the council's district and occupied in 1914. It had been held that this and other bungalows were not a nuisance. The bungalow had changed hands since its erection, and in January, 1914, the council decided that they would destroy it on the ground that that was within their powers under the by-laws. Later the bungalow was pulled down. The question that arose before Mr. Justice Atkin was whether the council had the right to pull down the structure under their by-law. It was contended that it was constructed in violation of the by-laws, as it was a "new building." Mr. Justice Atkin came to the conclusion that the defendants had failed to show that they had complied with the necessary provisions of the by-law entitling them to pull down the building. The result was that the defendants were unable to justify the destruction of the building owing to their failure to show that they had complied with the provision of their by-laws, and, assessing the damages at £20, he gave judgment for the plaintiff for that amount, and costs.

Plaintiffs now appealed.

Mr. Rigby Swift, K.C., and Mr. G. Lord appeared for the appellants, and Mr. Greer, K.C., and Mr. Maconochy represented the respondent, the plaintiff.

Mr. Rigby Swift contended that there were admissions showing that Mr. Andrews had had notice, and apart from this, he said, it was a temporary building, which brought it within the Public Health Act (Amendment Act), 1907, under which notice was not required to be given to Mr. W. R. Andrews, and that the building did not come under the Public Health Act, 1875, under which such a notice would be necessary. It was admitted that notice had been sent to Mr. W. R. Andrews by registered letter, but the learned judge refused to accept secondary evidence of the contents of this letter, and held that therefore the notice was not proved. He submitted that in this the learned judge was wrong.

Mr. Greer submitted that the judgment below was right on the grounds (1) that this was a new building within the terms of the Public Health Act, 1875; (2) that appellants had failed to prove their powers of demolition; (3) that they had no powers outside the by-law made under the Act of 1875, which by-law was bad; and (4) that the Acts of 1875 and 1907 must be read together, and once it was decided by the judge that this was a new building under the former Act, the 1907 Act did not apply.

The Lord Chief Justice, in giving judg-

ment, said the learned judge below was right in refusing to accept secondary evidence as to the notice to Mr. W. R. Andrews, but he was of opinion that the building in question was a temporary building which came within the amending Act of 1907, under which such notice was not required. He thought the Council were right in their action, and the learned judge in the Court below wrong upon this point. Judgment must be reversed in favour of the appellants.

Lord Justice Warrington and Mr. Justice Scrutton also delivered judgment allowing the appeal, which was accordingly allowed with costs.

Plumbers' Mate's Claim under the Workmen's Compensation Act against Builders: Important Judgment.*Dennis v. A. J. White and Co.*

March 16. Court of Appeal. Before the Master of the Rolls, Lord Justice Phillimore and Justice Sargant.

This was an appeal by the applicant from the award of Judge Woodfall, sitting at the Westminster County Court as the arbitrator under the provisions of the Workmen's Compensation Act in favour of the respondents, the employers.

It appeared that the applicant, Alfred Jas. Dennis, of Peabody Avenue, Pimlico, was, at the time of the accident in respect of which compensation was claimed, employed by the respondents, a firm of builders of Coburg Street, Westminster, as plumbers' mate. On August 27 last Dennis alleged that in the course of his employment he was riding a bicycle in Sloane Square when a motor car collided with him, with the result that he sustained a compound fracture of the leg. Judge Woodfall, however, held that the accident did not arise out of or in the course of his employment, and upon that ground he made his award in favour of the respondents, the builders. From this Dennis now appealed.

Mr. C. J. Williams appeared for Dennis and Mr. Shakespeare for the respondents.

The Master of the Rolls, in giving judgment, said in his opinion the appeal failed. He thought the question for decision was whether the accident to the applicant arose out of his employment or whether it did not. The arbitrator was the person to whom that question of fact was left, and his lordship saw no misdirection on his part in his finding of fact. The proper test to be applied in arriving at a decision upon the words "arising out of" was to consider whether the risk was reasonably incidental to the employment. A decision of the House of Lords bound that Court to hold that a decision of a lower court must be upheld upon a question of fact if there was evidence to support that finding.

Lord Justice Phillimore concurred in the judgment of the Master of the Rolls.

Mr. Justice Sargant dissented. He thought that they had to look at the facts of the present case somewhat carefully. The applicant was employed by builders and he was employed habitually once a day upon a bicycle belonging to the firm to get materials for the business of the firm. Whilst engaged on that business in Sloane Square he was knocked down by a motor car and injured, and the question was whether that accident occurred in the course of the applicant's employment, and arose out of his employment. The question was whether the applicant, in doing that and riding a bicycle, ran a greater risk than ordinary members of the public ran. The question was whether there was any extra danger to applicant on being asked to ride a bicycle once a day on the firm's business in the streets of London. It seemed to his lordship that if one case

had to be compared with another, that extra danger which the applicant ran riding a bicycle through the streets of London was much greater than the risk incurred by the applicant in the well-known lightning case. But, however that might be, the question in each case was simply and solely one to be judged by the facts of that case. He thought that any ordinary member of the public would be startled to hear it said that a person who had to ride a bicycle through the streets of London did not incur some greater risk than ordinary members of the public did. Upon the second point, as to whether it was a question of fact for the County Court judge, a question of law, or whether it was a mixed question of fact and law, he felt the greatest difficulty. However, in view of the decision by the other members of the court, his opinion became unimportant.

By a majority of the court, therefore, the appeal was dismissed.

Appeal to the House of Lords is probable.

ENQUIRIES ANSWERED.

Tax on Builder.

BUILDER writes: "A builder takes a plot of land upon lease at £25 per annum. Plans are passed for building twenty-four houses on the plot. Twelve of the houses are already built, and two are subject to a chief rent of £1 10s. per annum each house. The Surveyor's Taxes claims to include £20 as building profit on the capitalisation of houses improved chief rent of 10s. per house based on twenty years' purchase. I contend there is nothing to capitalise upon the builder is actually receiving £25 per annum from houses sold. Who is right?"

—A "chief rent" can only be created by a freeholder, but I take the position to be as follows: The builder has sold two houses and a portion of his leasehold plot of land for so much money, plus a portion of the head rental (30s. per annum), so that presumably he is passing on to his sub-lessee a fair share of the rental which he himself has to pay the superior landlord. If this is the position, I fail to see how the Surveyor's Taxes can claim anything in the way of tax beyond the ordinary Schedule A assessment on the annual rental (out of which the owner of the two houses may deduct at the proper rate when paying his rental to the builder). The mention of capitalisation in the enquiry rather puzzles me. Is a claim being made under the Land Valuation Department for increment duty? If so, resist it. F. S. I.

Increases on Pre-War Contracts.

P. W. H. (London) writes: "I should be glad if you could refer me to any report of cases in which builders or others have applied for and obtained increases on original contracts owing to advances in prices due to the War."

—Information of the kind referred to is not likely to be published in the *Builder* Press, but may be available to members of the National Federation of Building Trades Employers of Great Britain and Ireland, seeing that at the recent annual meeting of that federation, fully reported in the issue of this Journal for February last, the question of pre-war contracts was debated at some length, and a resolution passed providing that evidence should be collected from the members and submitted to place the whole matter before the Government. The best thing that you can do is to join a branch of that organisation. A. G. W.

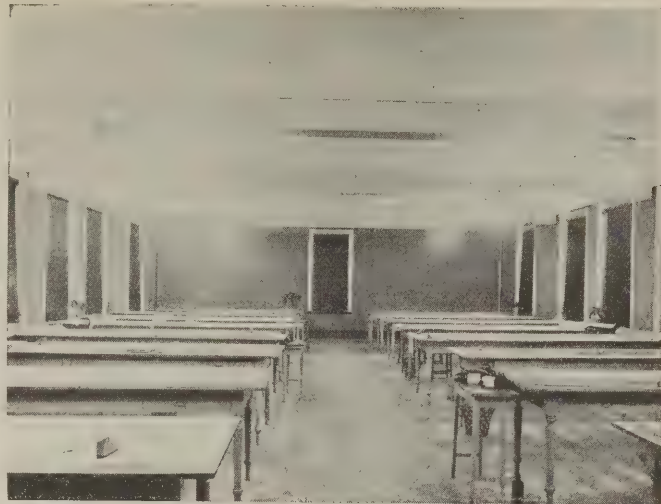
LIGHTING IN A SHIPYARD OFFICE.

only within the last few years that users of labour and other large users of electric light have begun to realise the importance of arranging their illumination with some regard to scientific considerations. Even to-day it is the exception, rather than the rule, to meet with an installation that has been planned with the object of affording uniform and adequate illumination, and, at the same time, avoiding strain to the eyes through either insufficient light. Excess of light is as harmful as inadequate illumination, and many users imagine that they have found all that could reasonably be expected from providing units of high candle-power at very intervals throughout their pre-

order that the best results may be obtained with modern high-efficiency lamps, the British Thomson-Houston Co., Ltd., of 1, Abchurch Lane, 77, Upper Thames Street, London, E.C. 4, have a special illuminating engineering department, the services of which are freely at the disposal of users who require information or assistance in dealing with lighting problems.

A typical example of a lighting installation carried out on scientific principles is afforded by that at the new offices of Sir Wm. Armstrong-Whitworth and Co., Ltd., Walker Shipyards, Wallsend-on-Tyne. Over 450 lighting points are comprised in the scheme, which is, we understand, the first office installation on a large scale in the Newcastle district to be carried throughout with "eye-rest" semi-indirect fittings. Since every department throughout the extensive premises has been lighted with due regard for the purpose it serves, the treatment shows a marked difference as regards the class of lamps employed and the type and candle-power of the lamps used, and the accompanying illustrations, selected from a series of photographs placed at our disposal by the B.T.H. Co., are merely representative of the results secured.

As a whole of the electrical lighting system was, we understand, supplied by the B.T.H. Co. through the Newcastle-



ARMSTRONG-WHITWORTH DRAWING OFFICE, WALLSEND-ON-TYNE.

upon-Tyne Electric Supply Co., Ltd., the wiring work being carried out by Mr. R. W. Cairns, who acted as sub-contractor to the Newcastle company. The architects of the buildings were Messrs. Cackett and Burns Dick.

In the drawing office, which measures 84 ft. by 34 ft., are installed twenty-two B.T.H. "Lumina" semi-indirect fittings of the pendant type. Each pendant is equipped with Mazda lamps—the illumination on the working plane being evenly distributed, and, it is claimed, ideal for mechanical drawing.

"Lumina" semi-indirect fittings are also employed in the tracing and general offices. The close-ceiling type of B.T.H. "Lumina" fittings are used in both cases, Mazda half-watt lamps of 200 watts being employed for the tracing office, and similar lamps, but of 300-watt size, for the general office. The tracing office lighting was intended originally to be effected by standard lamps, but with the introduction of low candle-power half-watts, the latest development in lamp manufacture was adopted. The lighting on the flat boards is particularly good, the

average foot-candles obtained exceeding materially those provided for in the specification.

With the indirect system the source of light is, of course, concealed entirely, and for this reason many users have expressed the view that there is something wanting in the effect. To meet this objection the B.T.H. Co. supply a range of fittings in which the lower portion of the "Eye-Rest" bowl is of white or coloured glass. No alteration has been made in the internal equipment, with the exception that a lamp of quite small candle-power, enclosed within a diffusing globe, lights up the lower translucent portion of the bowl, removing the dark effect of the indirect bowl without impairing in the least the efficiency of the system. The bowls may be tinted to match a colour scheme.

The dining-room for certain of the company's officials is 20 ft. 6 in. by 32 ft. 6 in., and is panelled in dark oak. As lighting experts know, the lighting of a panelled room is by no means an easy matter. Excellent results have been secured in the present case by the use of two "Eye-Rest" luminous bowl fittings, each equipped with six standard 60-watt Mazda lamps. In passing, it is of interest to note that all the cooking, for the officials and staff as well as for the workmen, is carried out electrically, the installation being one of the largest yet put down in this country.

Corridor lighting is seldom an easy problem, and the corridors at the Walker Shipyards offices are arranged on a curve, thus adding to the difficulty. Uniform and adequate lighting has, however, been secured by the adoption of ceiling fittings carrying small spheres of ribbed "Alabas" glass, equipped with standard Mazda lamps.

In the model room are arranged, in glass cases, models of warships and other vessels constructed by Messrs. Armstrong-Whitworth. The room, which is 25 ft. high, measuring 35 ft. by 45 ft. is lighted by four ornamental "Eye-Rest" pendants with composition bowls, each fitting concealing a 500-watt Mazda half-watt. The walls are dark red, and, far from assisting reflection, they absorb a great deal of light, but it will be admitted that the effect with the units employed is most satisfactory. Every detail of the models can be easily followed, while the hanging pictures and the mural paintings show up with surprising clearness.

It may be mentioned that the photographs here reproduced were taken by the unaided light of the Mazda units installed, and have not been retouched in any way.



ARMSTRONG-WHITWORTH MUSEUM, WALLSEND-ON-TYNE.

NEWS ITEMS.

New Pavilion for Bournemouth.

Plans for the building, after the War, of a new pavilion by the Bournemouth Town Council, at a cost of £50,000, have been approved by the Local Government Board.

Building Workmen for Munitions.

Negotiations are proceeding between representatives of the building trade unions and the Ministry of Munitions regarding the employment of skilled and semi-skilled workmen in the munition industry owing to the Department's embargo on building.

Glasgow Institute of Architects.

At the last meeting of the Glasgow Institute of Architects the following office-bearers were re-elected: President, John Watson; vice-president, John Fairweather, Wm. B. Whitie, James Davidson; auditor of professional accounts, Alexander N. Paterson; secretary and treasurer, Mr. C. J. MacLean.

Mr. Maurice B. Adams.

We are very glad to learn that Mr. Maurice B. Adams, F.R.I.B.A., architectural editor of our contemporary the "Building News," has recovered from his recent serious illness. He underwent two operations, but, now, after a stay at the seaside, is rapidly returning to a normal condition.

A New Federation of Builders.

After a year's organising endeavours, the South Wales and Monmouthshire Building Trades Federation has now been established. The first conference took place recently at Cardiff, when officers were elected as follows: Chairman, Mr. E. Williams, Cardiff; vice-chairman, Mr. W. T. Lloyd, Bargoed; secretary, Mr. R. H. Ley, Newport; treasurer, Mr. D. John, Llanelly.

Waterproofing Elevator Pits.

Where ground is waterlogged, pumping is necessary to keep the water away whilst the work is being proceeded with. There is a prevailing idea that it is impossible to construct a building with a dry interior under these conditions. We have been informed that some elevator pits situated in a similar position at Aberdeen have been made watertight with Pudloed cement concrete, and that the architect is fully satisfied with the result.

The Great Tympanum at Westminster Cathedral.

The mosaic tympanum over the main doors of Westminster Cathedral has just been exposed to view after many months of patient work. The great semicircular space has altogether five figures. The central group represents God the Son, attended by the Virgin Mother, and by her spouse, St. Joseph. Christ is seated on a throne, one hand raised in blessing the world, the other holding the book wherein we read the text "Ego sum ostium" (John x. 9), over the great door. The Virgin and St. Joseph are standing in pensive attitude, befitting their mysterious relationship to the Redeemer of mankind. The central figure is crowned by the cruciform nimbus. On the extreme left of the panel (the right of our Lord) St. Peter is shown as the first Bishop of the Christian Church; he is receiving his commission from his Divine Master, and holds the keys of the Kingdom of Heaven. On the extreme left of the panel is St. Edward the Confessor, the first patron of England; his civic sovereignty is indicated by the crown and sceptre, and in his right hand he holds the ring he gave to St. John the

Evangelist, who, in the guise of a poor man, asked alms of the King. Both these figures are in attitudes of humble adoration. The tympanum is 27 ft. across. Mr. Robert Anning Bell, A.R.A., of the Glasgow School of Art, was the artist chosen. Messrs. Powell carried out the work.

Memorial to the late Lord Londonderry.

A memorial to the late Marquess of Londonderry, subscribed for by the parishioners of St. John's Parish Church, Seaham Harbour, was unveiled on April 15 by the Earl of Durham, Lord-Lieutenant of the County, and dedicated by the Lord Bishop of the Diocese (Dr. H. C. G. Moule). The memorial is a white marble tablet, with a border of Irish green, bearing a suitable inscription, and surmounted by the coat of arms of the late Peer. It has been executed from the design of Mr. W. H. Wood, F.R.I.B.A., of Newcastle and Durham, by Messrs. Gaffin and Co., of the Carrara Marble Works, Regent Street, London.

"Review of Reviews."

With the March issue of the "Review of Reviews," the price has been raised to a shilling. If there seems to be no equivalent increase in the quality of the product, that is because of the absolute impossibility of making the "Review" twice as good as it was before. Improvements in detail, however, are observable. Better paper is used, with immense advantage to the printing, and more especially to the illustrations, which are more numerous, more interesting, and of incomparably better appearance than before. That most interesting feature, "Current History in Caricature," is maintained at full blast, and several pages of "Selections from Enemy Cartoons" offer a curious study in vulgarity and vindictiveness that are equally brutal. These cartoons are phenomenally destitute of humour and grace. Nevertheless, the "Review" is rendering an important service in collecting this evidence of the curious psychology of the enemy. Illustrations of architectural interest are a view of the Canadian Houses of Parliament recently destroyed by fire, and a photograph of Mr. A. G. Walker's Florence Nightingale memorial recently unveiled by Queen Mary in the crypt of St. Paul's. Altogether, as an abstract and brief chronicle of the times, the "Review of Reviews" fulfils admirably a unique function, and is distinctly worth the enhanced price.

Memorial to the late Lord Airedale.

At Mill Hill Chapel, Leeds, a stained-glass window has been erected to the memory of the late Lord Airedale by his children. The design of the window, which is the work of Mr. Archibald K. Nicholson, of Westminster, is intended to express the continuity of religion in England. The various scenes of the history of English Christianity are brought together by a growing tree, symbolising the increase and growth of life and development. In the tracery lights at the top the Holy Spirit in the form of a dove is drawing the tree upwards with his benign rays, and above are a crown and shield, in which is the monogram of the Alpha and Omega. In the four panels below are the cardinal virtues. Shields, with the arms of Leeds and Lord Airedale, are in the quatrefoils, and in the other tracery lights are Cherubim and Seraphim. One of the upper range of lights illustrates the history of Mill Hill, beginning with Thoresby, Sharp, and Dr. Priestley, who is represented as conducting his scientific experiments. In the background is the old chapel in which they worshipped. In another light is the

new chapel with the late Lord Airedale and the Rev. Charles Wicksteed, during whose ministry it was built. By the side of the window there has been placed commemorative tablet of bronze, which has a border of carved Yorkshire stone signed in oak leaves, denoting strength. Above are the arms of the family enamel. The inscription on the tablet runs: "In loving memory of James, Baron Airedale of Gledhow, for 60 years a worshipper in this chapel, this window is erected by his children."

Wealthy Architect's Will.

Estate of a gross value exceeding £300,000 was left by Lieut.-Colonel Henry L. Florence, V.D., F.R.I.B.A., who, recorded a few weeks ago, died at Bath in his seventy-third year. Colonel Florence has bequeathed £10,000 each to the National Gallery, St. Bartholomew's Hospital, and Charing Cross Hospital; £3,000 to the Haberdashers' Company, of which he had been a Master; two sums of £1,000 to the Architectural Association, one of them to be used in founding an annual prize; £1,000 to the British Museum. Subject to two life interests, the residue of the estate, amounting to nearly £100,000, is to be divided equally among several hospitals and museums, and the National Gallery. To the trustees of the National Gallery he has bequeathed the marriage group "Maternité," by Dalou, and the trustees are empowered to select any of the pictures that they care to choose for the Gallery, the collection to be known as "The Henry L. Florence Bequest," and that it is also stipulated for such of the pictures or other objects as the trustees of the Victoria and Albert Museum may select, except the "Fox and Poultr" by Snyder, which goes to the Dulwich College Gallery. Mr. H. W. Lydall, solicitor, and Mr. Alfred Cox, architect, are the executors.

BEFORE THE TRIBUNALS.

The following are among the cases that have come before the Local Tribunals:

At Loughborough a firm of builders and contractors claimed exemption for an apprentice, aged nineteen, a son of a member of the firm. They claimed to be engaged on direct munition work. The Tribunal had gone to the navy and army, and one-third of the normal staff—thirty—were enlisted. Three months' exemption was granted.

At Loughborough, also, a plumber, thirty-three, asked for exemption, as he was engaged on railway maintenance work. His aged father and mother were partly dependent upon him.—Exemption granted until May 31.

At Woolwich a local builder applied for the further exemption of his sole remaining plumber, aged twenty-four (already put back ten groups), stating that he had advertised and had applied to the Labour Exchange, but could not obtain a man to take his place. Answering the Tribunal, the applicant said that at the Labour Exchange he was told that there were no plumbers over military age obtainable. Further exemption granted by temporary certificate until June 1.

At Bath the Victoria Brick and Tile Works asked for the retention of a brick burner and setter, aged twenty-eight. He was the only brick setter left and absolutely essential to the carrying on of the business. They had failed to get a substitute. The chairman of the company said they must have bricks for war hospitals.—Certificate refused.

ELECTRICAL NOTES.

The New I.E.E. Wiring Rules.

Despite of the war, the Institution of Electrical Engineers found time to revise their wiring rules and to publish a new edition, in order that the rules may be kept in conformity with the developments in electrical practice. The chief alterations or changes in the new edition include the extension of rules to medium pressures, provision for conductors with rubber compound protection (so-called "cab-tyre sheathing"), a table showing the capacity of conduits, and a rule recommending colours for conductors. As regards medium pressures, these are pressures between 250 volts (the previous limit) and 650 volts. In this connection it is laid down that for medium pressures adequate precautions must be taken by earthing or other suitable means to prevent any metal in contact with the conductor from becoming electrically charged. Where the pressure of a three-wire system exceeds 250 volts the three wires or two pairs are brought into the premises, and the supply must be given from two pairs of terminals arranged so as to minimise danger from shock, and the wiring from these must be kept distinct in separated circuits, which must not be connected to gas pipes. Gas pipes receive new attention in that they must be protected by such conductors, metallic sheathing, or conduit, whether earthed or not. Circuits within safes and strong rooms must be controlled on both poles by linked switches placed outside the locked door.

As regards conductors, it is laid down that the area of fittings must not be less than No. 20 s.w.g., and all intended conductors having a greater area than that of No. 16 s.w.g. must be stranded. Where colours are used to identify conductors it is recommended to employ black for negative, red for positive, and yellow or white for neutral. With alternating current phase work, red, yellow, or white, and blue are recommended for the phases, and green for the neutral. Cased conductors, so far as metal conduits are concerned, has not been altered, but for medium pressures heavy gauge-screwed conductors must be employed, whilst it is also suggested that the conductors be sloped to drainage positions. As regards wood casing, permission is given now to bunch conductors of the same polarity carrying currents from final sub-centres.

Cased wiring receives a good deal of attention, the chief alteration, as already mentioned, relating to tough rubber compound protection. Here it is stated that insulated conductors, protected by an outer reinforcing covering of tough rubber compound not less than 50 units, thick and capable of resisting acids, oils, and alkalis, may be used without conduits, provided that the resistance to fire is equal or superior to that of vulcanised rubber, that the covering encloses the conductors as a whole or each insulated conductor separately, and that the conductors comply with the insulation requirements for ordinary cables.

Cased rubber wires may be used for surface wiring without mechanical protection when in view and not exposed to injury, if they are spaced from walls, ceilings, and are metal clad from each other if carrying more than 6 amperes, and protected by wood casing or tubes when out of sight. The question of surface wiring with flexibles is also dealt with. The booklet gives much other useful guidance and information.

A New Carron Range.

The Carron Company have designed a new electric range, No. 103, which is intended specially for use in large private establishments and small private hotels, etc. It consists of two ovens having between them a grill and hot closet. The ovens are each 16 in. wide by 18 in. high by 20 in. deep, with white enamel lined and heavily lagged casing. The doors are double, the inner ones having a glass panel fitted with a thermometer, so that the food can be inspected without loss of heat. Each oven is loaded to 3 kilowatts, and has 3-heat regulation. The grill is a space 20 in. wide by 16 in. high by 8¾ in. deep, also white enamelled and fitted with a metal and tinned grid. It is loaded to 2.5 kilowatts. The hot closet below is also 20 in. wide, but 9½ in. high and 20 in. deep. It is provided with a fall-down door which remains in a horizontal position when open, where dough may be left to rise without being exposed to keep warm. The loading is 1 kilowatt.

The hob is fitted with three 8 in. and three 10 in. boiling rings, loaded at 1,200 and 1,600 watts respectively, and each has 3-heat regulation. The elements are of the standard zig-zag pattern, arranged to slide horizontally, with contact springs which engage sockets in the body of the oven. They are accessible for inspection or replacement. The complete range is of solid design, in cast-iron with polished steel hob and fittings. Panels at either end are mounted with "Diamond" rotary regulating switches, with a separate cartridge fuse for each circuit. The overall dimensions of the range are 48 in. by 2 ft. 9½ in. by 1 ft. 11½ in., and the total loading is 10 kilowatts.



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LATE CONTRACTS, etc.

MISCELLANEOUS

April 5.—**MATERIAL.** Rochdale.—Supply of the following material, for the Gas and Electricity Committee: Lime for purification purposes, wrought-iron tubes and fittings, cast-iron pipes and specials, No. 8 steel charging shovels (Parkes), bar and sheet iron, galvanised iron buckets, 12 in., 84 lb. per dozen, engine, cylinder and gas engine oils. Particulars from T. Banbury Ball, Manager, Gasworks, Dane Street.

April 8.—**MATERIAL.** Falkirk.—Supply and delivery of the following

material, for the Town Council: Whin material, including machine and hand broken metal, causeway setts, kerb, and channel; ironmongery; joiner and cartwright work; brasswork; ironfounding work; cement, pitch, and pitch oil; paints and oils; brushes; fireclay pipes and connections; disinfectants. Particulars from T. M'Kee, Inspector's Office, Burgh Stables, Falkirk.

April 12.—**OILS.** Hamilton.—Supply of oils, grease, etc., for their Dunduff quarry, near Blackwood, for the District Committee of the Middle Ward of the County of Lanark. Particulars from W. E. Whyte, District Clerk, Hamilton.

L.G.B. Report on the Housing Act

In their report for 1914-15 on the administration of the Housing of the Working Classes and similar Acts, the Government Board state that "since after the outbreak of the war we issued circular to local authorities urging them to prepare schemes for the provision of working-class dwellings in anticipation of possible unemployment, and at the end of the year to which this report relates before us no fewer than sixty-six schemes for the provision of some 4,120 houses for urban authorities, and sixty-eight schemes for the provision of some 570 houses for rural authorities." The total loans sanctioned during the year amounted to £1,125,176.

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THE ARCHITECTS' & BUILDERS JOURNAL.

Wednesday, April 12, 1916.

Volume XLIII. No. 1110.



TWITTY'S ALMSHOUSES, ABINGDON: ERECTED ABOUT 1710.

THE ARCHITECTS' & BUILDERS' JOURNAL.

APRIL 12, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1110.

EDITORIAL.

IN dealing last week with the Charing Cross bridge question, we took no account of certain curious phrases that had fallen from Viscount Chilston in the course of a previous debate on the same subject. Lord Chilston, who as Mr. A. Akers-Douglas, was First Commissioner of Works from 1895 to 1902, and was Home Secretary from 1902 to 1906, made the remarkable statements that the bridges the railway company already had power to build would be a greater impediment to river traffic than would be caused by the strengthening of the existing bridge; that the railway company admitted that the existing bridge was unsightly; and that they would be glad to see it removed, "but, after all, they were not philanthropists—they were practical people, and they were not prepared to build a new bridge merely to meet the views of people with æsthetic tastes."

* * * * *

These observations were perhaps meant to be comforting, and in the House of Lords they may possibly have had that effect. How magnanimous in the railway company to abstain from inflicting on the long-suffering public bridges that would be yet more obstructive to traffic! and how ingenuous the admission that the existing bridge is unsightly! Surely Lord Chilston did the company an injustice in saying that, after all, they are not philanthropists. He and they are overdone with modesty. That it would be philanthropic to meet the views of people with æsthetic tastes need not be hotly disputed; but that philanthropists are not practical persons is as groundless an assumption as that persons who ignore æsthetics are therefore practical. Moreover, the calm insinuation that æsthetic views are negligible is entirely unpractical. Taken in its narrowest sense, the word "practical" is an accepted euphemism for "sordid." To say that to be sordid is not to be really practical were but a sordid sort of argument. Yet who shall say that the S.E. & C.R. is a more practical corporation than the Underground, which is rapidly developing a very pretty taste in æsthetics?

* * * * *

Railway people preserve unpleasant traditions of high-handed arrogance. Half a century's enjoyment of the most extraordinary privileges and powers has given them an inflated idea of their rights and a debased conception of their duties. They must be shown that such a loftily patronising attitude as that taken by Lord Chilston on behalf of the railways is now ludicrously out of date, however well it may have served in the days of the railway mania. Extended exercise of their fiendish proclivity for putting up structures that are not only hideous in themselves, but, as in the instance of the

Charing Cross bridge, spread desolation as far as the eye can reach, is not to be tolerated now that all excuse for it has ceased. The railways are under a moral obligation to abstain from afflicting humanity in this way is a feeling no longer confined to a numerically insignificant section of the community—persons who can safely be derided as possessing "æsthetic tastes." If Lord Chilston imagines that the friends of amenity are few and feeble, he should correct this view by remembering what happened to the Northern Junction Railway scheme, rather more than two years ago, when it was coolly and confidently proposed, in effect, to ruin Hampstead Garden suburb. As we said then, and as we may now repeat with emphasis, the town-planning idea has taken a firm hold of the national conscience, and the whole relationship between town-planning and the railways must be readjusted in the light of the "æsthetic tastes" which Lord Chilston so airily dismisses as if they were inexplicable to him except as a sort of inconvenient eccentricity.

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We are informed that several of the exhibitors at the recent British Industries Fair have expressed strong dissatisfaction at what one exhibitor termed the "general untidiness of the Fair." He suggested that the outward appearance of the Fair should be such as will set an example to the individual exhibitor by getting some reasonable grouping of stands, uniformity of lettering, and a general tidying up of plan such as a competent architect having experience of Continental exhibition methods would carry out. Orderly and methodical arrangements upon a general plan would, our correspondent is convinced, conduce to economy of time, space, and expense in the fitting up at the Exhibition, would bring increased and enhanced attention to the wares exposed, and would give the whole exhibition a more definitely agreeable character wherewith to impress the buyer, British or foreign.

* * * * *

In being "untidy" and heterogeneous, the Fair followed British precedent, and a high official has declared that he likes it that way—"it shows more individuality." But individuality, when it does not imply genius, is less precious than the harmony which it may be so blatant as to destroy. Individual prominence or eccentricity should not be allowed to mar the general effect. Brutally bold lettering, for example, standing out here and there with vulgar insistence, may rob the *coup d'œil* or the vista of its grace, and will give the visitor a general impression of barbarism which, characterising the whole show, implicates exhibitors who have certainly not deserved such a stigma.

It may be supposed that in advocating "uniformity of lettering" our correspondent refers to size rather than style; for while it would be perfectly right to prohibit the use of lettering that is manifestly out of scale, it would be a much more delicate matter to prescribe the style. Many traders adopt a special style as a sort of trade mark, and it would be in most instances impossible to persuade them to abandon no matter how beautiful the proposed substitute. This, however, is a mere detail. What is of importance is, that if there is any virtue in town-planning, the principle should be applied to the arrangement of exhibitions that are held with the object of showing British goods to the best possible advantage. If these exhibitions, or fairs, are to go on and prosper, architects may find it worth while to specialise on the general planning, and on the design of stalls and kiosks. There is really no reason why such exhibitions should not, in their units, and as a whole, be dignified and beautiful rather than vulgar and ugly.

A rather belated memorial to Walter Bagehot has been unveiled at Langport. Lord Bryce, who performed the ceremony, did not exaggerate in saying that Bagehot was one of the finest minds of a generation that included Darwin and Tennyson, Kelvin and Maxwell, Mill and Grote; and that only now—thirty-five years after his death—is a tablet raised to him. A singularly original, independent, and penetrating mind, would have served his country well at this hour. His singularly luminous articles in the "Economist," of which he was editor, were written with the knowledge of a practical banker who was also a trained scholar, and with the high literary skill which made his handling of abstruse subjects singularly adroit and even entertaining. His "English Constitution" has been translated into many languages, and has been recently issued successfully in a cheap edition. His "Physics and Politics" has gone through many editions, and was his first serious attempt to apply the principles of evolution in the domain of politics and political economy. If he had been a third-rate novelist or a second-rate poet, his memorial tablet would have come prompt upon his death. As he was merely a writer who exercised a profound influence on modern thought, the tardy memorial comes after nearly forty years. But the fact attests the strength and consistency of his work, as well as the public reluctance to honour its thinkers and teachers as willingly as it honours those who merely amuse it.

Mention of Bagehot calls to mind his relative R. Greg, who, in his "Rocks Ahead," put forward certain trenchant observations on trade-unionism that, although they were written in 1874, are to-day as profitable for doctrine as they were then. "The power and the organisation of our working classes," he warned his day, "are growing year by year, and that power and organisation are being persistently applied to obtain higher rates of wages, and to enforce shorter hours of labour, while at labour is becoming from the same causes less conscientious and less disciplined. The inevitable result of these combined agencies is that the cost of production of the commodities for which Great Britain has always been most famous, is greatly enhanced both positively and relatively." In an appendix that is still valuable, he cites some extraordinary facts relating to the behaviour of trade unionists in the building trade. Their conduct was ludicrous almost beyond belief; as when, a master-mason at Ashton obtaining some stone ready polished from a quarry near Macclesfield, his men refused to fix it until the polished part had been defaced, and they had polished it again by hand, though not so well as at first. Many other instances

of similar fatuousness are cited; and from recent happenings it is to be inferred that this spirit is by no means extinct. How to prevent the excesses of trade unionism from sapping the industries of the country is as difficult a problem as it was in Greg's day, and, in view of the grave national issues at stake it now requires far more delicate handling than ever. So far as the building industry is concerned, much amelioration may be expected from the Conciliation Scheme, which has a highly educative as well as a more directly practical value.

A furious renewal last week of the German bombardment of Reims lends point and piquancy to a note on Reims Cathedral contributed by M. Auguste Dorchain to a volume issued by the French Minister of Fine Arts under the title "Les Allemands Destructeurs de Cathédraux et de Trésors du Passé." Our contemporary the "Tablet" translates M. Dorchain's contention that for at least three hundred years the Germans have been haunted by the idea of destroying the cathedral. In April, 1614, John Joseph Goerres, an illustrious professor, and the pious author of "Christian Mysticism," in four volumes, writes in the "Rheinische Merkur": "Reduce to ashes this basilica of Reims, in which Clovis was anointed, in which was born the empire of the Franks, the false brethren of the noble Germans. Burn this cathedral." On September 5, 1914, we read in the "Berliner Blatt": "The western group of our armies in France has already passed the second line of forts, except at Reims, the royal splendour of which, reaching back to the time of the White Lilies, will surely soon crumble in the dust beneath the blows of our shells." On January 1, 1915, in the artistic and literary supplement of the "Berliner Lokal-Anzeiger," Rudolf Herzog has an ode "in honour of the destruction of Reims Cathedral": "The bells no longer ring in the dome of the two towers. The benediction is blasted . . . Reims, we have closed thy house of idolatry with lead." As the Germans are constantly boasting of their absolute unity of mind and purpose, it is natural that they should be credited with a unanimous and an inveterate lust for the destruction of Reims Cathedral, their Kaiser's crocodile-tears notwithstanding. While, for the mere credit of humanity, we are very reluctant to commit ourselves to so extreme a view, it must be admitted that M. Dorchain makes out a *prima-facie* case which offers a much more plausible explanation of the outrage than do the feeble and shuffling apologetics with which it has been defended on other grounds.

Our reference, last week, to the absurdities of the official document on canteen construction and equipment has called forth the mild remonstrance that the occasion was one of emergency. That may be an explanation, but it is hardly a valid excuse. To encourage building and equipment by unqualified persons being manifestly unwise and unjust, there is a moral obligation to protest against every instance of it that obtrudes itself on public notice. For the canteen example one ought really to be grateful, since, like a caricature portrait, it emphasises the type and exaggerates the predominant characteristics. In fact, by reducing the system to absurdity, it awakens a faint hope of consequent revulsion. As we have said on previous occasions, official publications fulfil a useful and a legitimate purpose when they present special information for the guidance of architects, but when this aim is less conspicuous than the implicit assumption that the architect is superfluous, there is full warrant for remonstrance.

HERE AND THERE.

NO less an authority than Washington Moon, a stickler for precise English, has told us that if, as the "Revised Version" says, there were "stories" in the Ark, then this must have meant that Noah had provided himself with a little light literature for rainy days. So it behoves us to be careful with our spelling, and with our use of words. It will not do to cite Dickens in support of "bannister," for it is "baluster," and when the architect is working at his board he must be sure not only to spell the word right, but to give the baluster a good outline, for balusters, in default of very careful design, have a knack of looking too fat or too thin when they come from the turner's. And there are many other words that present a snare for the unwary—for instance, acroterium, which belongs properly to a pediment; and as a pretty breakfast-table problem one might ask what is the difference (if any) between a print and an engraving? All this by way of preface to the title of the frieze that ran round the wall of the Parthenon. We know that frieze well; fragments of it we can see at the British Museum (or, to be correct, we *could* see them before the Government became miserably economical in closing the museums, while at the same time paying pensions of £5,000 a year to retired Lord Chancellors); and every architectural history-book shows us the crowded procession of frisky little Greek horses. Decimus Burton put the frieze around his Athenæum Club, and Barry made use of it next door in the Reform, and in a score of other places we can see it—most recently of all in the new Empire Theatre of Cardiff. But are we to call it the Parthenon frieze or the Panathenaic frieze?—that is the point.

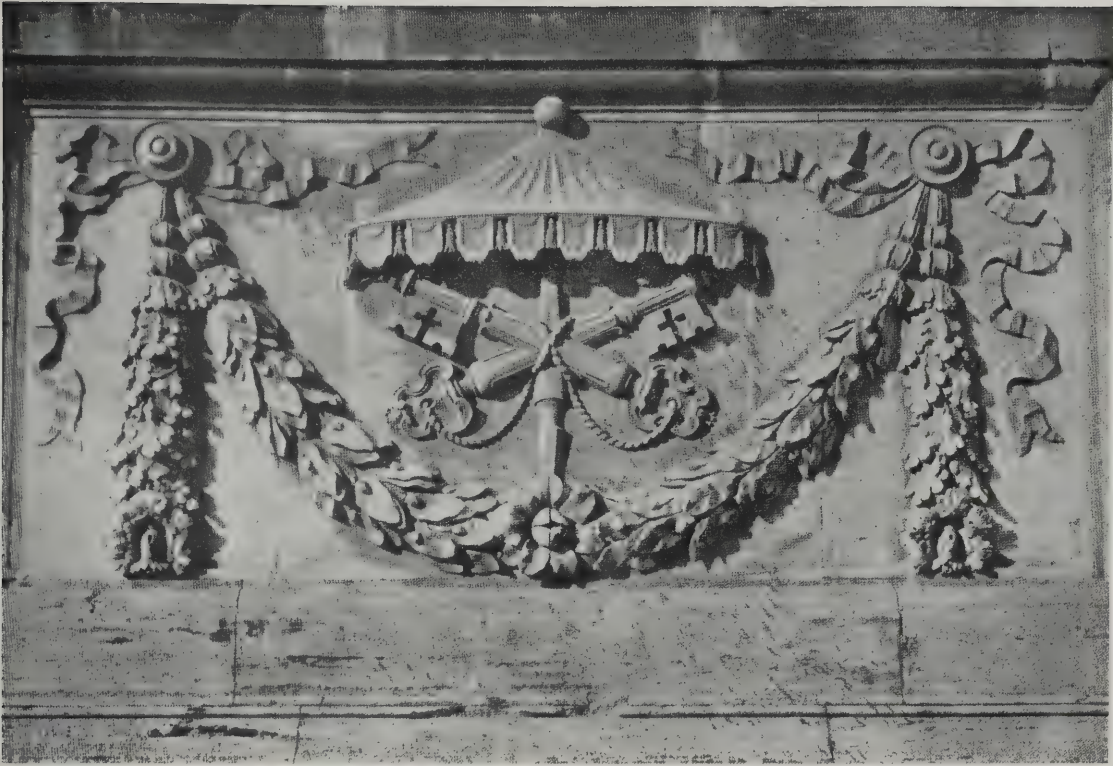
Except by precept, Washington Moon will not help us here. Other authorities, however, are at hand, and, after patient study of all the knowledge and wisdom which they are able to impart in small type, I think it must be admitted that we can use either expression, though perhaps it is more correct to describe the frieze as the Panathenaic frieze, with accents on the "ath" and the "na." Every year the Athenians formed in procession for the festival of the Panathenæa, and once in every five years they had an especially elaborate celebration, extending over several days and including contests in athletics, music and rhapsody; the successful competitors in the athletic contests being awarded amphoræ which were embellished with the figure of Athena and were filled with olive oil from the sacred trees (how strange a contrast with our own times; imagine the winner of the 200 yards handicap at Stamford Bridge being presented with a decorated jar of oil instead of what he expects to receive—a set of fish knives and forks or a very solid black marble clock in the Bexhill-Classic Style!). The procession wound its way joyously up to the Acropolis, a richly embroidered peplos for the tutelary goddess being borne on high between two poles like a glorious banner, and when this robe had been placed on Athena's figure, and the religious ceremonies had been gone through, the festival was consummated. Phidias's frieze, carved sublimely in marble, has familiarised us with this Grecian rite, and we know it as the Parthenon frieze, but, as I have said, we should be more correct in referring to it as the Panathenaic frieze.

I had always thought that the unblushing art of "publicity" came from America, but here is a well-known mural painter explaining to a New York audience in the Metropolitan Museum of Art that "publicity" really goes back to the early days of

Man, and that carvings at Persepolis, giant figures and hieroglyphics in Egyptian temples, stained-glass English cathedrals, and decorative paintings in palaces of the Italian Renaissance were, in reality, no other than "publicity" for persons and families. This is certainly a new way of looking at the matter. The lecturer proceeded: "One can readily imagine how the first advertiser in prehistoric days may have painted the front of his cabin red and thereby attracted the attention of the whole community. As years went by, several people painted their houses red and a refinement in form and design became necessary to attract attention. This is the probable beginning of the history of advertising. Twenty-five or thirty thousand years before Christ, in the mountains of the Haute Pyrennees and in the cañons of the Perigord there lived artists who advertised, by accomplished designs and mural paintings, their success in hunting the reindeer and the mastodon. So successful were their primæval advertisements that the wonderful cave of Lorthet became for ever famous and the intrepid hunters in the Valley of the Garonne are immortal. Other tribes hunted the reindeer and other hunters killed the mastodon, but their names are forgotten and their race has perished from the memory of man through a lack of proper advertising. Again, in the lands of the Pharaohs, the kings of Egypt marked upon their walls, in a pictorial language, the glorious history of their dynasties. Approaching Thebes with its hundred gates, one could have seen for miles, gazing and gleaning over the desert sands, the symbols of the might of the Theban monarchs. At Karnak three thousand years ago or more, Seti I. had painted on the walls of temples and hewn out of huge masses of stone his own figure and that of the gods of Thebes. At Medinet-Abou Rameses had himself depicted thanking his protecting gods for his military triumphs in Nubia and Abyssinia. So the kings of Egypt, through the force of pictorial and plastic advertising, constantly impressed upon the minds of their subjects that they were the favoured of the gods. The effect of this constant advertising exists until the present day. A certain mystic splendour is an inherent part of Egypt and is found in no other land. This is so largely if not entirely to the fact that the kings of Egypt employed the best and the highest-priced advertising agents. . . . In the fertile valleys of the Euphrates there were to be seen from afar the splendid coloured bas-reliefs of the Chaldeans, the Medes and the Babylonians. On the walls of the royal palace of Susa, the great and invincible Eannadad, king of Sarpourla, advertised that he had triumphed over his enemies and that the vultures had devoured their bodies. From afar on the walls of Babylon were to be seen the wonderful advertisements of the strength, prowess and cruelty of the Assyrian kings and their fabulous ancestors. Nimrod, the mighty hunter, depicted gloriously in coloured tiles, was to be seen squeezing to death a frigate by a casual pressure of his elbow. Nebuchadnezzar and Sennacherib, Cyrus and Artaxerxes had depicted on the walls of their palaces the wonderful triumphs and the frightful slaughters of their conquests; and even to-day, in our own land, 'the cruelty of Assyria' is a by-word. Why? Because the Assyrian artists, working with clay and enamels, were skilled beyond measure in psychological suggestion and in practical advertising. . . . It has been said that the most successful advertisement in the history of the world was created by Pericles on the Acropolis at Athens. We of to-day are still paying interest on his original investment through our tourist parties, our archaeologists and our art collectors. And yet we still are asked, Should architects show their buildings? Why, of course they should, and put their portraits into the fabric too. UBIQUE



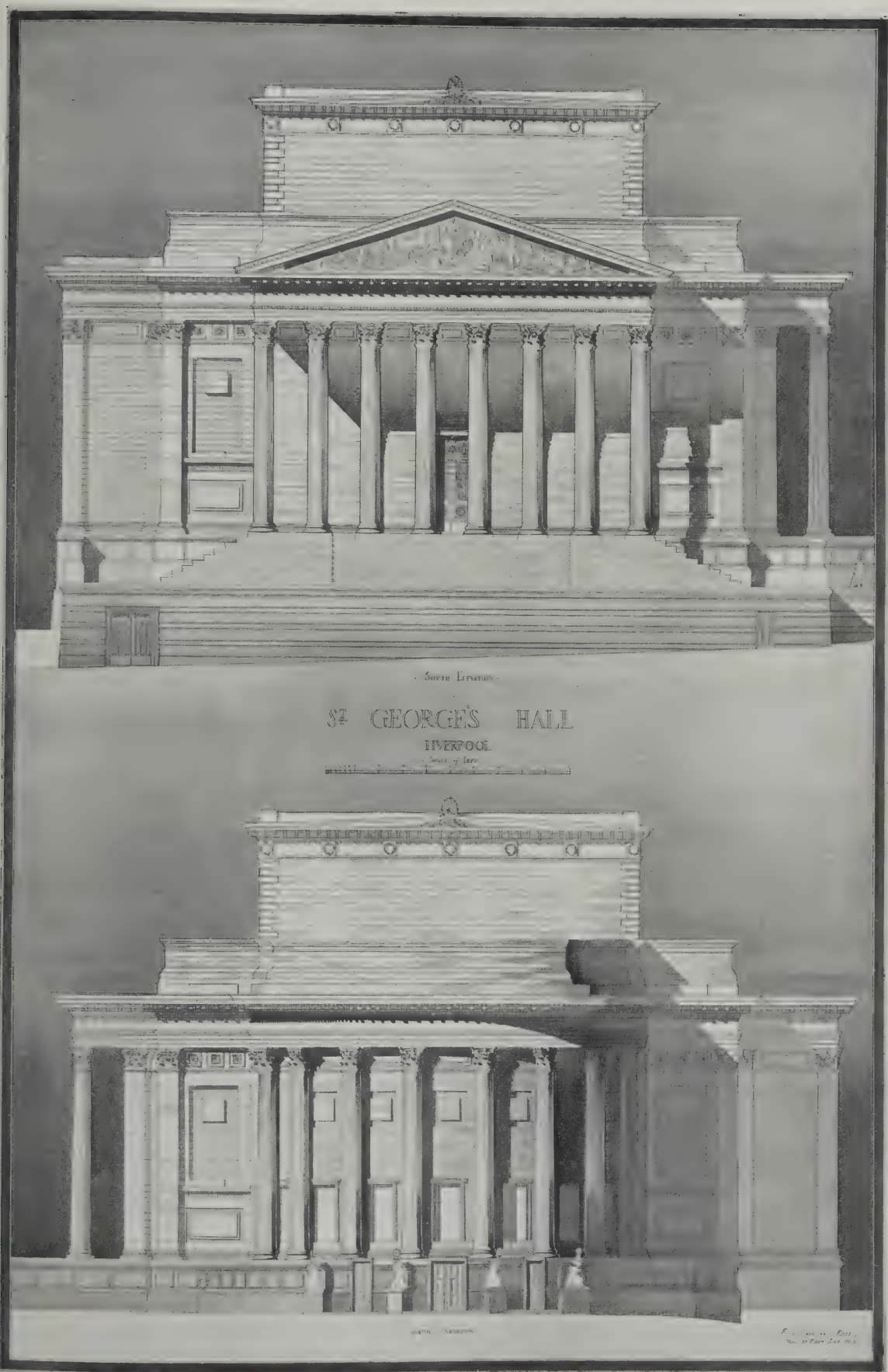
MONUMENTS. XV.—MONUMENT TO COMBATANTS OF 1870 AT ANGOULÊME, FRANCE.



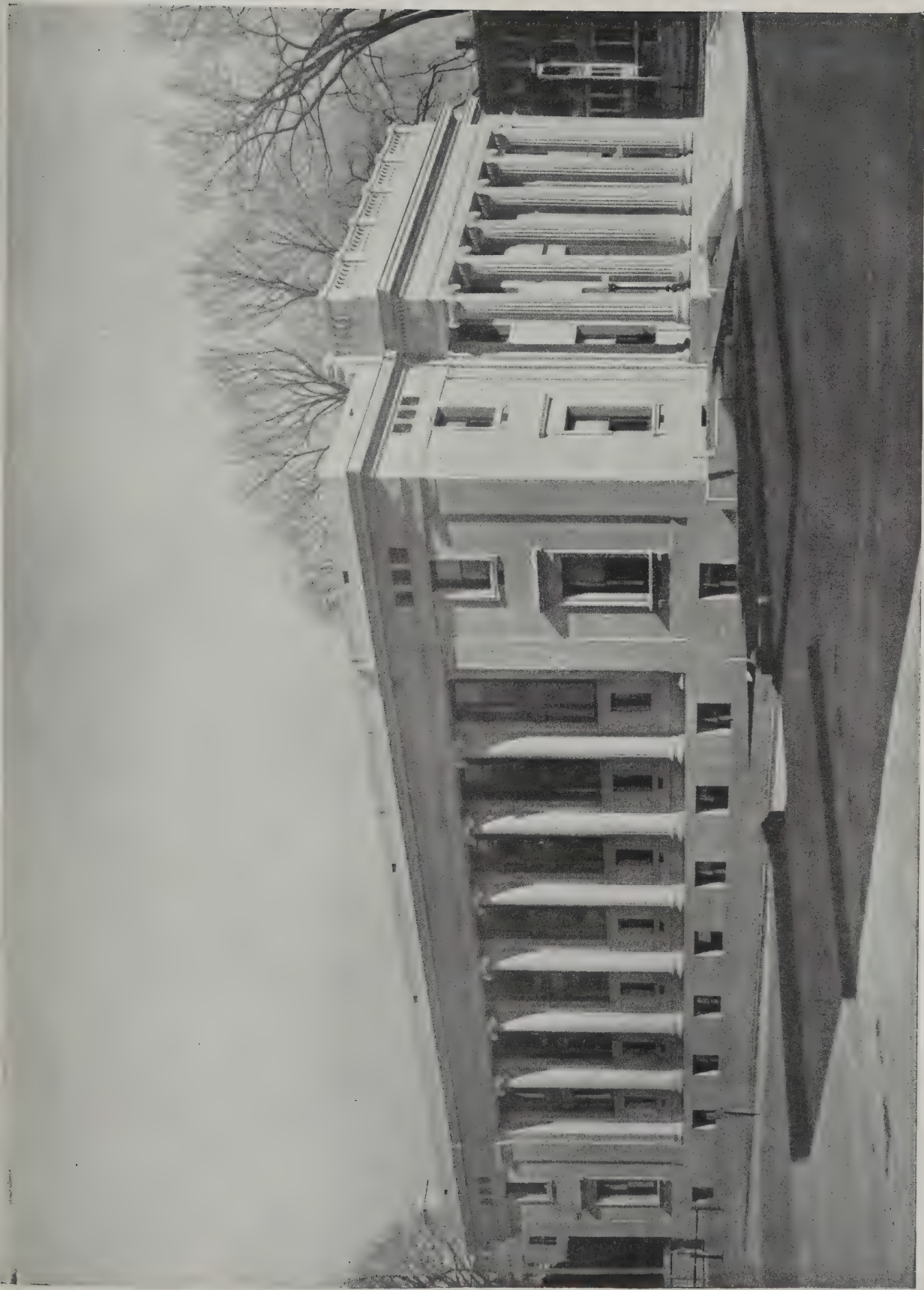
DETAILS OF CRAFTSMANSHIP (SERIES II). VI.—CARVED ENRICHMENT ON STONE PLINTH, CHURCH OF ST. JOHN LATERAN, ROME.
BY ALESSANDRO GALILEI.



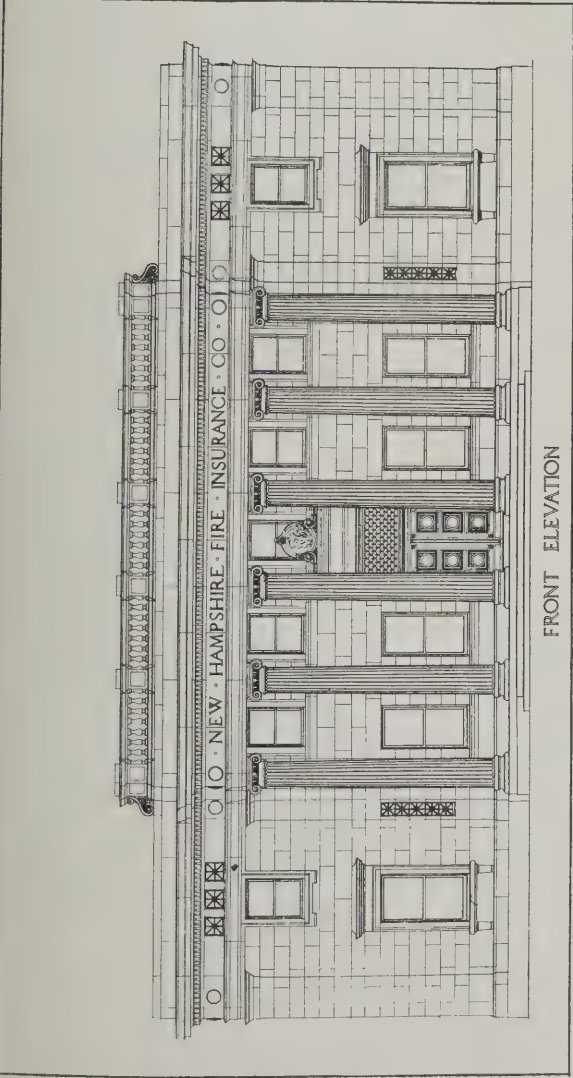
SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.). XXX.—DOCTOR'S HOUSE, NEW CROSS, LONDON, S.E.



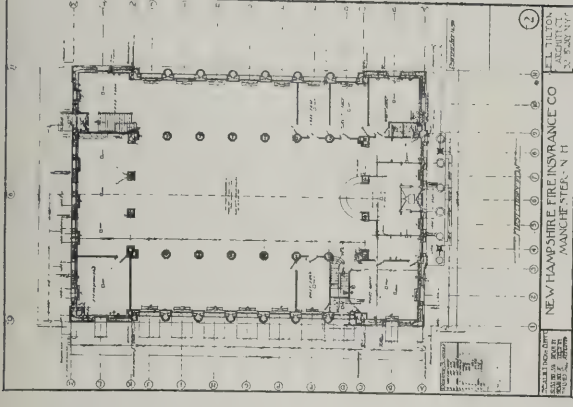
TUDENTS' DRAWINGS (SERIES II). XIX.—ST. GEORGE'S HALL, LIVERPOOL: NORTH AND SOUTH ELEVATIONS.
MEASURED AND DRAWN BY E. N. FRANKLAND-BELL.



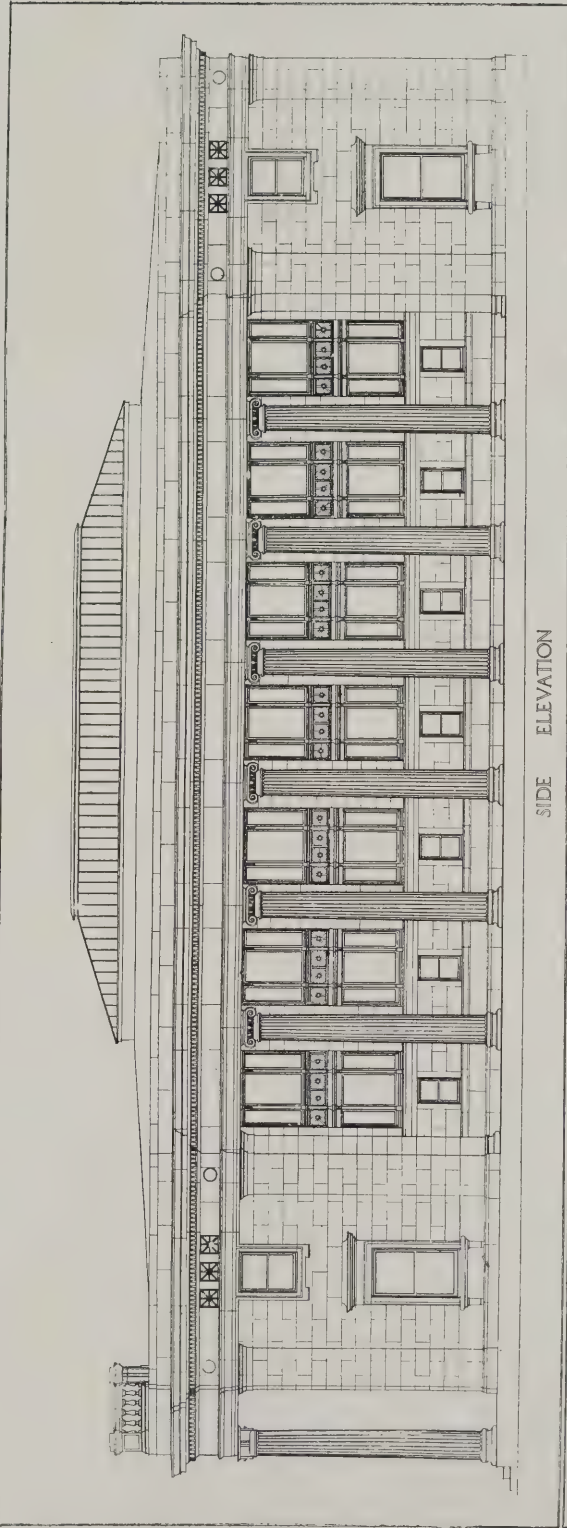
MODERN AMERICAN ARCHITECTURE. XLII.—NEW HAMPSHIRE FIRE INSURANCE BUILDING, MANCHESTER, N.H.
E. L. TILTON, ARCHITECT.



FRONT ELEVATION

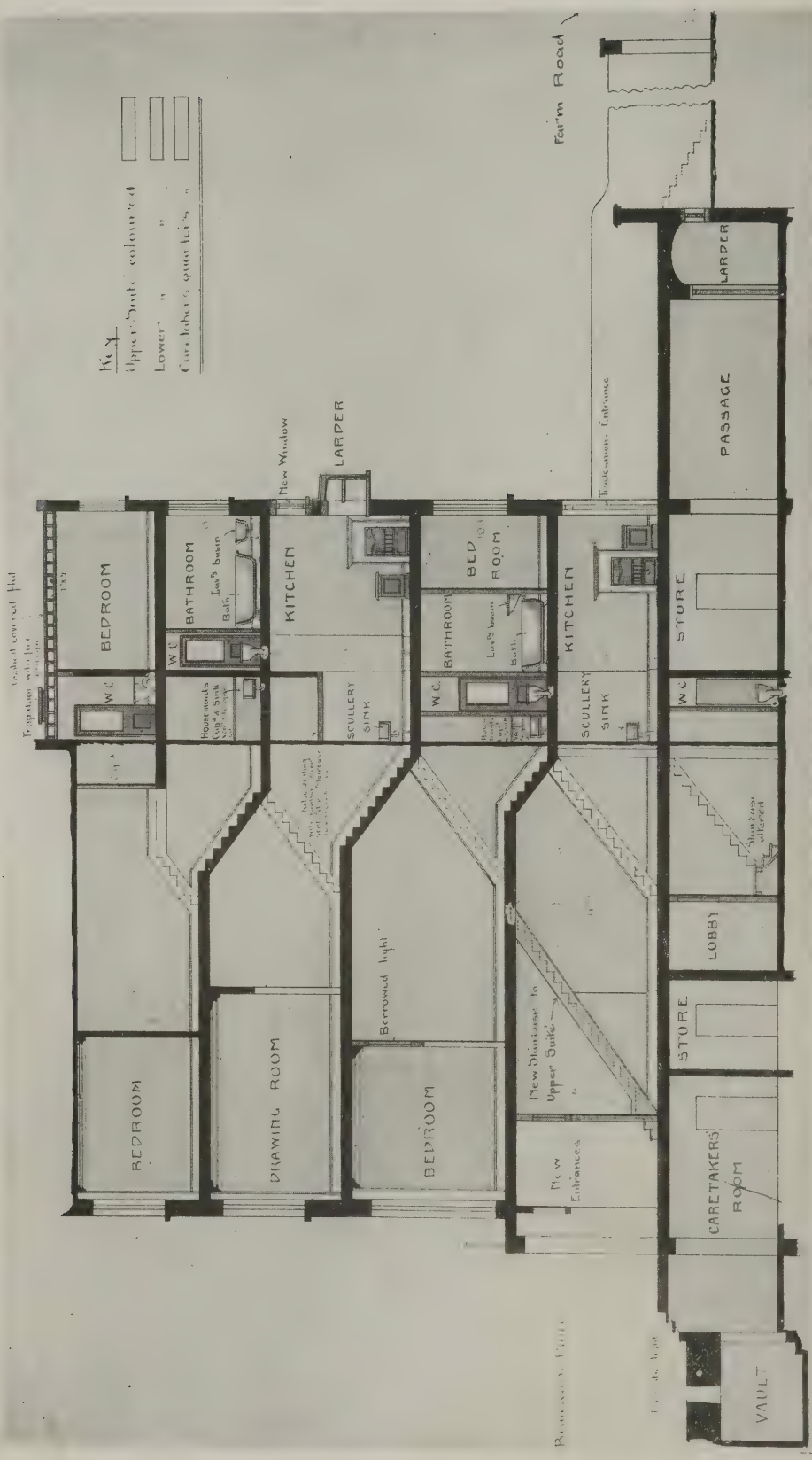


NEW HAMPSHIRE FIRE INSURANCE CO.
MANCHESTER, N. H.
E. L. TILTON ARCHT.
PAGE 5. 1898



SIDE ELEVATION

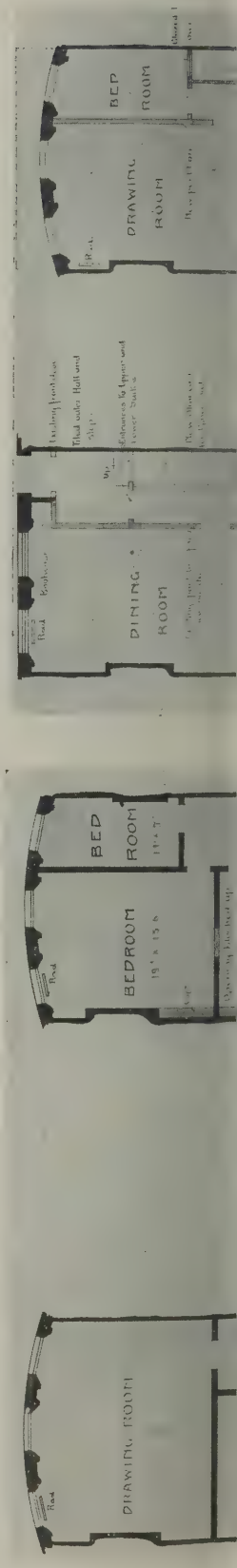
NEW HAMPSHIRE FIRE INSURANCE COMPANY BUILDING
SCALE 1/8" = 1'-0"
E. L. TILTON ARCHT.

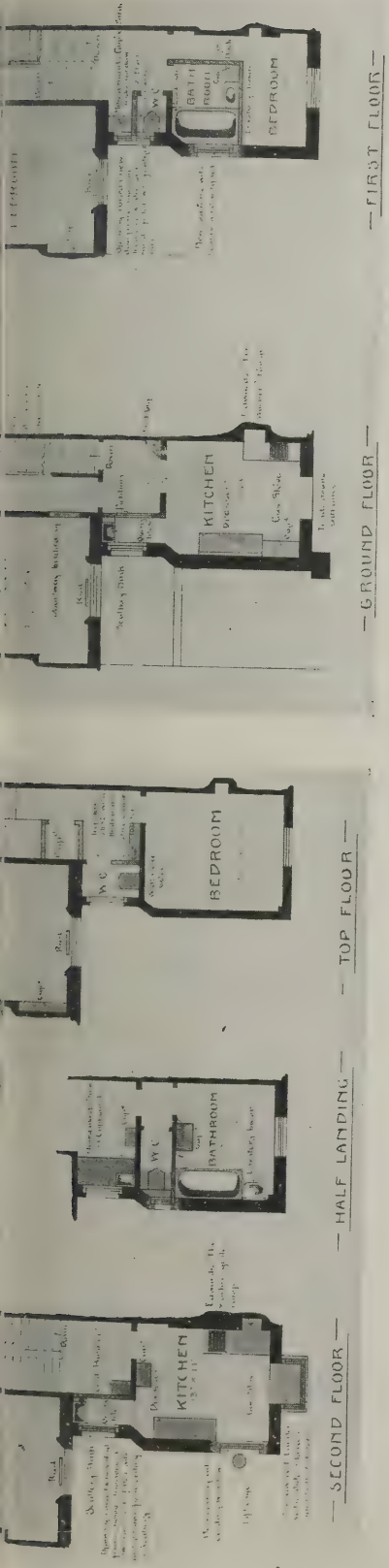


Key

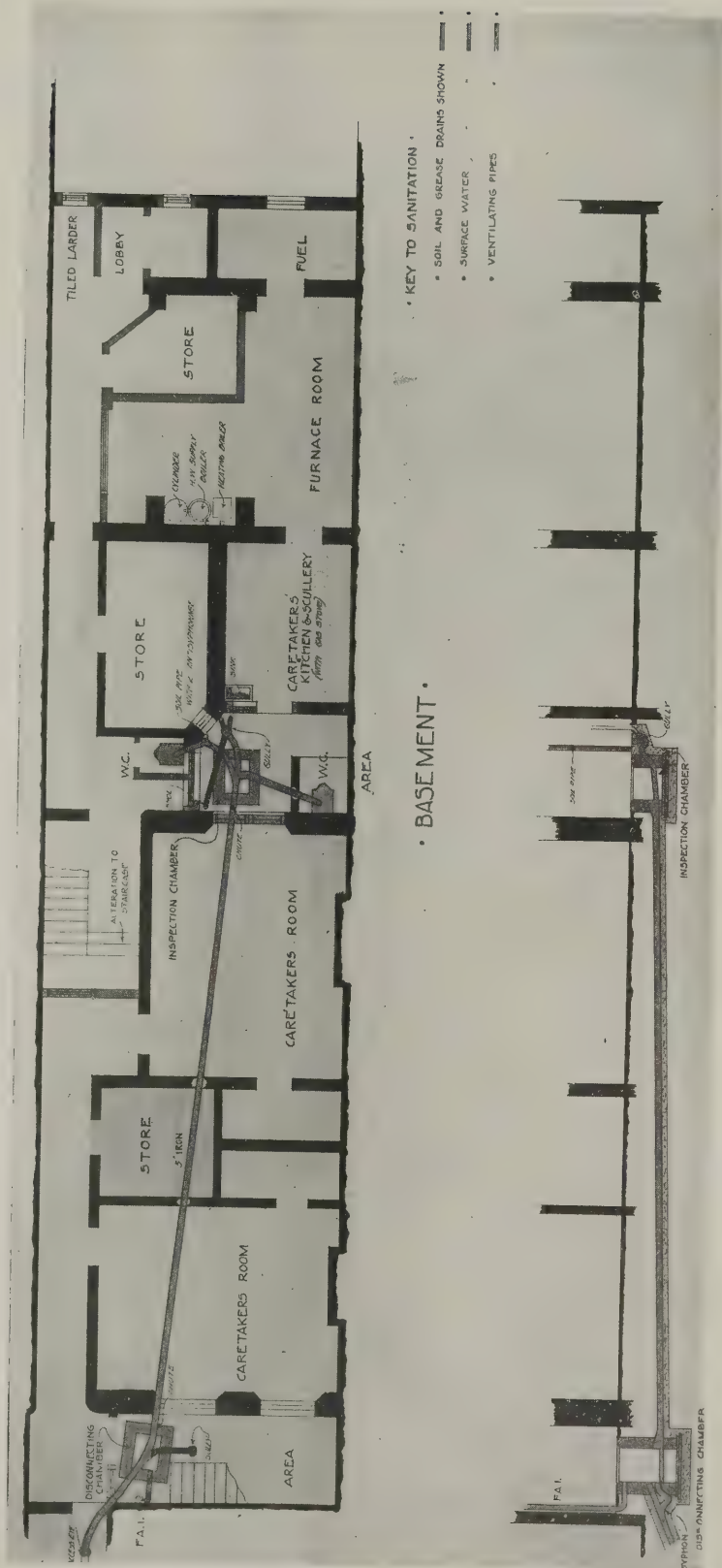
Upper Suite, coloured	
Lower " "	
Closet, or space for " "	

Cross-Section.





Plans.



Section through Basement, showing Drainage details.

CURRENT ARCHITECTURE (SERIES III.). XXX.—ALTERATIONS TO NO. 61, BRUNSWICK PLACE, HOVE, CONVERTING HOUSE INTO TWO SELF-CONTAINED RESIDENTIAL SUITES.

HERBERT FREYBERG, F.S.I., M.S.A., ARCHITECT.

THE PLATES.

Monument at Angoulême.

In publishing this plate we would especially draw attention to the appropriateness of a fine sculptured figure suitably arranged in conjunction with a plain obelisk form. Too often a sculpture on a monument is allowed to overrun the general design, but in this example there is no such extravagance. An element of sentiment infused with an element of symbolism, and the result is unusually beautiful. For a small monument men who have fallen in the War we can conceive a better type than this one at Angoulême.

Carved Enrichments on St. John Lateran, Rome.

These enrichments are not only interesting in themselves, but should prove of service to architects showing some very admirable treatments for garlands and wreaths. The carving was executed by Alessandro Galilei in 1734.

Doctor's House, New Cross.

To this little street façade a piquant character is given by the concentration of attention on the first-floor bay window, with figures symbolical of Health and Strength in the niches. It is quite a unique example in this series.

St. George's Hall, Liverpool.

The grand character and sublime massing of St. George's Hall are well indicated by this drawing of the end elevations. The north end is semi-circular in plan, enclosing a hall, while the south end has a large pediment filled with sculpture which was designed by Cockerell and Alfred Stevens and executed by Nicholl. The drawing reproduced is by Mr. E. N. Frankland-Bell, of the Liverpool School of Architecture.

New Hampshire Fire Insurance Building.

We reproduce these illustrations from the March issue of "Architecture" (New York). They show typical modern American public building displaying a knowledge of classical design which, unfortunately, is not characteristic of similar buildings in England to-day.

No. 61, Brunswick Place, Hove.

The alterations to this house are fully described in the article on the next page.

TASTE AND WAR MEMORIALS.

In the April issue of the Journal of the Imperial Arts League Mr. Harold Speed, the well-known artist, writes on the subject of war memorials. Referring to the aims of the recently-formed Civic Arts Association, he says: "The scandal of so many of our public monuments is not that we do not possess artistic ability, but that we do not employ it; the giving of the commissions being generally in the hands of men without knowledge of such matters, who, indeed, often pride themselves on knowing nothing about art, satisfied that 'they know what they like.' If the subject concerned engineering or law or any other profession, they would consult an expert as a matter of course; but in matters of art, for some unknown reason, people—and particularly in England—think their own ideas quite good enough. Whereas the taste of the ordinary man is really a matter of habit; he likes whatever he gets used to, disliking anything that is different, particularly anything with marked character that cannot be ignored. We have a standing example of this in the fashions for ladies' dresses, which are howled down when they are newly arrived and loved by people when they have become accustomed to them, their

dislike being reserved for the next new fashion. I do not say everybody is like this, but the ordinary person of whom I am speaking certainly is. These habits of taste it is the duty of the artists of the country to control, so that people get used to the best in matters of taste that their artists are capable of evolving. . . . One of the great difficulties experienced by those who earnestly wish to employ the best ability is to get in touch with the right artists. This is particularly the case in regard to the smaller memorials, such as tablets, drinking-fountains, etc., and in desperation, and to avoid trouble, they usually end by going to some commercial firm. . . . In order to give artists an opportunity of showing what they are capable of doing, the Civic Arts Association is organising an exhibition of designs and models for war memorials, and offering prizes, full particulars of which will be published shortly. It is to be hoped that all those capable of undertaking such work will avail themselves of this opportunity. . . ."

THE ARCHITECTURAL REVIEW.

TO the April issue of the "Architectural Review," just published, Mr. Arthur Stratton contributes an article on the old College of Physicians in Warwick Lane which was built from Wren's designs, but is now no longer existing. It included a most interesting theatre in which anatomy lectures were given. A section and two plans of this theatre are shown (after Cockerell's measurements), and Elmes's eulogy is quoted that the interior was one of the best of any in existence "for seeing, hearing, and classification of students and fellows, and for the display of anatomical or philosophical experiments." The theatre was about 40 ft. in diameter, fitted with six ranges of seats, rising steeply one above another around a central arena, where a table and three seats were arranged, one for the President, a second for the operator, and a third for the lecturer.

Mr. William Grant Keith adduces further evidence in support of the contention previously made by Mr. Herbert C. Andrews that the group of buildings in the background of Van Somer's portrait of Queen Anne of Denmark at Hampton Court represents the Palace of Oatlands, not Theobalds, as has been assumed; so that there seems now to be no authentic view of Theobalds at all.

Some most striking photographs of "The Last of Ypres" are reproduced, showing the ruined Grand Place and the broken fragment which alone remains of the once magnificent tower of St. Martin's Church, and there are some sketches by John Ruskin of Venice and Verona which proclaim the hand of a rare draughtsman.

"Current Architecture" is represented by the Phoenix Assurance building in King William Street, London (the late J. Macvicar Anderson and H. L. Anderson, architects), and the new Cardiff Empire, by Messrs. Wm. and T. R. Milburn.

TO OUR READERS.

In view of the Government restrictions on the imports of paper and pulp, readers are requested to obtain their copies of this Journal from one source, by placing a regular order with a newsagent, instead of buying copies haphazard; in this way, by reducing the wastage of copies that necessarily attends the effort to meet the convenience of casual purchasers, they will share with us the satisfaction of contributing in some degree to the great object of national economy.

THE CONVERSION OF A HOUSE INTO MAISONNETTES.

IN the issue of this Journal for December 15 last we published a paper by Mr. Herbert Freyberg, F.S.I., M.S.A., on the conversion of large houses into maisonnettes. This aroused a large amount of interest, and we have thought therefore that it would be of practical service to give illustrations of a particular example of the methods advocated. This example is No. 61, Brunswick Place, Hove, shown on the double-page plate in this issue (for which we are indebted to the Society of Architects), in connection with which the following detailed particulars have been very courteously supplied by Mr. Freyberg, the architect under whose direction the alterations were carried out:—

The illustrations show the arrangements for the conversion of this residence into two complete self-contained residential suites, with separate quarters for the resident caretaker. The tenure being in fee simple, the alterations were neither hindered by restrictive covenants nor delayed by waiting for needful license. The position is convenient for access, while removed from noise of traffic; there is a pleasant outlook in front, a side view of the sea, and open space at the back, with upper windows commanding views of the sea and the Downs.

Condition of the Premises.

The general condition of the premises was such that, in any case, an expenditure of more than £700 would have been necessary in order to render the premises fit for occupation as a single residence; therefore, only a proportion of the total outlay incurred can properly be charged to the cost of conversion, and that amounts to less than half the entire expenditure.

The structure was substantial and sound for the most part, except where the floors, originally of poor scantling (9 in. by 2 in. joists, with 20 ft. span), had been still further weakened by gas-fitters and bell-hangers.

The sanitation was as constructed some forty years ago, with pan-closets, bell-traps, and like abominations, so that an entirely new system, on scientific principles, was necessary.

Domestic conveniences, except for a good supply of cupboards and dressers, were non-existent, the only place from which hot water could be drawn being the kitchen range.

The staircase could be so utilised that, with one new flight and the alteration of another, it could be made available for the new planning.

The decorations were all of heavy character, many coats of paint and varnish having been put on in past years, one over the other, so that burning off throughout was the only fit preparation, followed by some four coats of oil, finished enamel.

The highest bid for the premises in their original condition was £800, while the rental to be obtained would not have exceeded £100 per annum on agreement, when the house had been put in complete order as a single residence.

The Local By-laws.

A preliminary interview with the local authorities cleared away many difficulties, and as the three requirements of the Borough Surveyor were in the nature of improvements, they were all complied with. They comprised: (1) The raising of the height of one bedroom from 6 ft. 9 in. to 8 ft.; (2) the provision for escape from fire; (3) six inches of cement con-

crete over the site. The local authorities claimed that the conversion of the premises made them a new building within the meaning of the Act, a contention which was not arbitrarily enforced.

The formality of passing the plans was complied with before tenders were invited, and much friction was thereby avoided. The highest tender submitted was £1,346 and the accepted estimate £1,175.

In carrying out the alterations old materials of every description were used up, these comprising bricks, timbers, joinery, cupboards, shelves, dressers, etc.

Improvement of Light and Air.

Darkness reigned not only in the basement, but also generally through the house—especially on the staircase. New window openings were made, and those existing were enlarged and the openings filled in with steel frames, glazed with prismatic glass, and a thorough transformation effected.

No reasonable outlay was spared in providing convenient cupboards, shelves, folding flaps in kitchens and on landings, mirrors in bathrooms, and electric-light fittings throughout.

The hot-water supply was made continuous and laid on to baths, lavatories, and sinks. Central heating with radiators in the principal rooms was provided.

Caretaker.

A trustworthy caretaker holding an official position resides in the basement, and, besides receiving free quarters and fuel, is paid 5s. per week, with 1s. 6d. per week for gas and 6d. per week for cleaning materials. His duties are to stoke the two furnaces, keep the entrance-hall and door-step clean, carry up coals, etc.

Total Outlay.

The contract price was	£1,175
And the extra works, mostly in the nature of improvements, amounted to	155
	£1,330

which can be summarised as follows:—

1. Structure.	
a. New stairs, enclosures, windows and glazing, new partitions, doors and frames, repairs of old plastering and incidental structural alterations	£328
b*. Provision of girders, stanchions and brickwork for strengthening certain floors ...	40
c. New plaster and cornices to conceal girders	22
d. New flat roof over bedroom with raised ceiling	55
e. Fire escape to roof	10
f. Cement concrete over site with wood-block floors in living rooms	25
	480
2. Sanitation comprising:—	
a*. New 5-in. iron drain with access chambers, new soil and anti-siphonage pipes, 5 new w.c.'s, 5 new sinks, and 2 new baths and 2 new lavatory basins	220
b. New cistern and new water supplies throughout, with stop-cocks	

* These items, amounting to £760, or more than half the total expenditure, would have been necessary quite irrespective of the outlay for remodelling.

3. Heating, Hot Water, and Stoves.	
a. Central heating with furnace, boiler, and 8 radiators	£70
b*. Furnace with boiler cylinder and system for continuous supply of hot water	£78
	148
c*. Certain new chimney-pieces, stoves and tiled hearths throughout	70
4. Electric Light and Bells.	
a*. Installation of electric light	32
b. Electric light fittings	28
c. Electric bells	12
5. New Gas Supply in 3 separate services, with fittings for caretaker's quarters	
6*. Internal Decorations, General Repairs and Fittings	
7*. External Repairs and Painting	

Arrangement.

Each suite has been made entirely contained (save that the coal-cellar lock-up box-room of the upper suite, the basement) and planned upon floors only (except that the lower suite's coal-cellar, larder, two box-room servants' lavatory in a specially separated part of the basement).

Each of the two suites contain bedrooms, bath-room, two separate, two reception-rooms, kitchen, scullery, larder, coal-cellar, and box-room.

The caretaker's accommodation is quite distinct, comprises two bright rooms, kitchen with gas cook, scullery, sink, w.c., etc.

Terms of Letting.

The tenancy agreements are for years, with obligation on the part of tenants to redecorate internally or to pay a lump sum in lieu thereof.

The rent for the lower suite is £100 per annum, and for the upper £90 per annum. In each case an additional 10s. per annum is chargeable for fuel and caretaker's services.

Annual Return.

The gross rents and charges amount to £1,800 per annum, and the estimated outgoings are put at £1,200 per annum.

leaving a net income of £600 per annum, which, if considered in relation to property for which only £800 could have been obtained, is not unsatisfactory, even adding the total cost of the repairs and alterations.

The foregoing is an account of a particular case at Hove. Now, let us consider the general application of the principles to the metropolis. First, it must be admitted that, although London is large and its means of locomotion both convenient and inexpensive, many of our brainworkers it is an unsatisfactory area as regards residence, and the following reasons:—

(1) In neighbourhoods like Baywater, Bloomsbury, Chelsea, Kensington, and Whitechapel, small residences are not had, except at prohibitive rents, many large houses are either empty or going to rack and ruin, or else are being put out a miserable but temporary

as a private hotel, boarding-house, nursing-home, residential club, or some other lodging-house life under another name.

e) These premises are never likely to be used again for the residence of one family only.

f) Leaseholders cannot or will not put their premises into order, and so they become derelict.

g) Leases are either too short, or else ground landlords are too unaccommodating to make any modification of restrictive covenants.

h) Consider what might be done, and the results which would accrue:—

i) Unwieldy houses consisting of a basement with five floors above can easily and economically be transformed into good residential suites with caretaker's quarters in addition, and a great saving in working can be effected where adjacent houses are simultaneously converted, so that a passenger lift can be installed.

j) Residential suites in the neighbourhoods mentioned would command tenants' inclusive rents ranging from £100 to £200 per annum, according to position and accommodation.

k) The average middle-class brainworkers of both sexes would save time and trouble, and also energy, in living near their work.

l) The post of caretaker would provide comfortable quarters and light but remunerative employment for many of our idle fellows returned maimed from the war.

m) A few green fields might be rescued from the grasp of the speculating builder. n) proper co-ordination of the following would be sure to attain satisfactory results.

o) Architects with knowledge and experience not only of structural alterations, but also of locality and its requirements.

p) Leaseholders saddled with property under either short terms to run or hampered by prohibitive covenants.

q) Ground landlords prepared to view the question both in its social and commercial aspect, and who would, if asking an increased ground rent, grant an extended term.

r) Rating authorities who would realise that the real interests of the ratepayer in general would be better studied if they were content with a moderate increase in the ratable value after alteration.

s) Last, but not least, abolition by the Chancellor of the Exchequer of the Rent Restriction Finance Act, with its provisions as contradictory as they are unrepresentative.

Although only full details of one scheme have been set forth, the writer has had much experience during the last fifteen years in designing more or less similar schemes, mostly in the metropolitan area, and in the writer's experience a formerly-modelled residential suite seldom makes a tenant. In London, and also in other cities—certainly Liverpool—there are many properties in convenient and desirable neighbourhoods which, although good to scrap, are quite useless as at present arranged, but which are capable of being made into convenient homes for two of the most deserving classes of the Empire—namely, the brainworkers of the war, who could and would pay a remunerative rental as tenants, and the many idle fellows returned from the war in a maimed condition, who would be thankful

for comfortable quarters, combined with light employment.

The writer therefore ventures to hope that this very important side of a housing scheme will commend itself to those who can influence public opinion, and that steps will be taken to develop on proper and comprehensive lines a policy which, if generally adopted, would benefit so many classes.

ARCHITECTS' REGISTRATION IN NEW ZEALAND.

The New Zealand Institute of Architects has furnished the Society of Architects with some particulars of the Registration Act which is now in operation in New Zealand. The original idea was to have merely Government registration without compulsory membership of a governing society, but this was abandoned in favour of the incorporation of the existing Institute, and the granting to it of administrative and disciplinary powers. By reason of the peculiar circumstances existing in the Dominion, where many persons "dabble" in architecture as a sort of offshoot to their ordinary business, it was considered to be impossible to restrict the term "architect" to registered men only, and it was therefore decided to adopt the title, "registered architect," connoting membership of the Institute. It is true that membership is not compulsory and that any person, however unqualified, may call himself an "architect" and can carry on such practice as he can obtain; but he may not, without incurring penalties, style himself a "registered architect," nor can he use the distinctive letters. This may seem but a trifling distinction to anyone unacquainted with the conditions prevailing in New Zealand, but it is really a very valuable one, because much weight is attached to membership of regularly constituted bodies as representing *some known standard of value*, and this value is very greatly enhanced when the governing body has the power to discipline its own members. The practical result of the Act has been the flocking to the Institute of all those persons who by any reasonable means can claim to be qualified, and the number of regular practitioners who have failed to take advantage of the Act is so small that the ultimate success of the Institute can in no way be affected.

It is not proposed to make any further attempts to obtain legislative restriction to the use of the term "architect," but the Institute will follow the lead given by the New Zealand Society of Accountants and endeavour to obtain amendments to suitable Acts, providing that all buildings erected with public money or by public companies or corporate bodies, must be erected under the supervision of a "registered architect," and that all certificates for progress or other payments required by law or custom to be signed by an architect shall only be signed by a "registered architect." These and other movements in contemplation will in a short time exclude the non-registered man from participation in any work of any importance.

As regards the effect of this legislation on the public, it is already becoming necessary for a man to be "registered" to obtain better-class work, and in a short time the Institute will share the experience of the Accountants' Society and no "outsider" will be considered.

It will be seen from the foregoing that registration in New Zealand is on different lines from those proposed by the Society

for the United Kingdom, which provide for registering in the first instance any bona-fide architect, and then those who come in by examination, but in any case without obliging them to join any architectural body. It does not aim at protecting the title of "architect," but rather to give the profession a legal standing.

Commenting on the New Zealand scheme, the Society express the view that it is a mistake to leave the title "architect" to be adopted by unregistered practitioners and to force others to describe themselves as "registered" architects. "Our view of registration is to provide a means whereby the public may know that the man who uses the title 'architect' is entitled to it by training and experience. We are not out so much to stop the man who may do architectural work under another name as to prevent the unqualified man from holding himself out to the public as an 'architect.' This is what the New Zealand Act does not do, and it provides a loophole which would certainly be taken advantage of under similar circumstances in this country, where there are many architects who do not and never will belong to any professional body, and who would be only too glad to have the exclusive right of using the title 'architect,' discarded by the rest of the profession under the Act. However that may be, the Government of this country would never grant a monopoly to one professional body, or even to one profession, and that is why any registration scheme to have a chance of success must protect all vested interests and provide proper facilities for anyone desirous of qualifying to do so, so that the profession would still be open, but would have a legal status which it does not at present possess."

MICHIE MILITARY HOSPITAL.

A section of the London 43rd V.A.D. (Architectural Association) Detachment (which is composed very largely of architects), under the command of Commandant A. W. Coffin, provided two fully equipped stretcher squads at the Michie Hospital, Queen's Gate, on March 15, on the occasion of the opening of that Institution by H.M. Queen Alexandra. Her Majesty was received by the commandant of the Hospital, Mrs. Harry Isaacs and by Dr. Brydone.

During the afternoon Lord Reading inspected the hospital and spoke in most appreciative terms of the services which are being rendered throughout the country by the V.A.D.'s working under the British Red Cross Society. Members of the detachment afterwards had an opportunity of inspecting the hospital, which is fitted with the latest appliances in the way of baths, etc., and is believed to be the only hospital of its kind in the kingdom which is possessed of one particular type of medical bath.

Those members of the stretcher squads who are architects were in particular able to appreciate the very successful manner in which the hon. architect to the hospital, Quartermaster Victor Wilkins, M.S.A., had overcome the many difficulties incidental to adapting a mansion of this description for the purposes for which it was never originally intended, viz., the reception and treatment of something like fifty wounded soldiers.

With the opening of the Michie Hospital the Architects' V.A.D. will be, in addition to its other duties, providing orderlies for five V.A.D. hospitals in the Westminster Division.

PAINTING BY MECHANICAL MEANS.*

BY ARTHUR SEYMOUR JENNINGS, F.I.B.D.

THE application of paint, japan, enamel, and varnish by mechanical means, in contradistinction to the old-fashioned method of using brushes, effects an enormous saving of time, and to some extent of material also. It should also be recognised that the result from the point of view of both durability and appearance is a distinct improvement on the older method. In the United States of America, dipping, paint spraying, and the application of paints and varnishes by other mechanical means are employed almost universally in the industries, and in this country such methods have been successfully used in certain factories for many years past. Of late there has been a remarkable increase in this direction in the United Kingdom, although there are not a few manufacturers who still seem slow to adopt modern methods.

It is remarkable to note that a great number of firms who have given some consideration to the subject are inclined to the idea that while paint or its equivalent may be successfully applied by mechanical means in other industries than their own, it is not suitable for the particular one in which they are engaged. Closer examination, however, proves that there are very few trades indeed using paint in which the processes may not be successfully employed. Paint is applied by dipping to agricultural implements on a very large scale, to casements, bedsteads, piano cases, barrows, reaping-machines, cans, and a great many other articles. By spraying paint, varnish, japan, and various other articles are applied to shells and to confectionery, to celluloid buttons and to motor-cars, to birdcages and to dynamos. And the list could be extended almost indefinitely.

In my investigation of the subject I have encountered a few firms who have tried one or other of the methods mentioned, but have abandoned them on the ground that the result has not been satisfactory—never, be it remarked, because they were found to be too expensive. Investigation has proved that such cases of failure have arisen either because a suitable apparatus was not chosen for the particular work in hand, or that the right sort of paint or japan was not used. The latter cause of failure is the most frequent, as, for instance, where some small iron castings were painted by dipping but were found to stick together and not to dry properly. Here the japan used was not suitable for the purpose, and it will be readily seen that paint or japan which might answer well if applied by means of a brush would not be suitable for one to be applied by dipping.

Without going at this stage into the question of other failures, it may be remarked that an idea prevails that the cost of plant necessary for carrying out these processes is prohibitive. This is altogether a mistake. A spraying machine with the necessary plant could be purchased from £30 to £50, although a large plant would, of course, cost very much more. The same is true in the case of dipping. If the articles to be painted are very large and very elaborate, the plant will obviously be somewhat expensive. For many purposes the tanks, hoists, etc., may be of a very simple character, as, for example, iron and steel sashes, which are dipped into a

narrow tank containing paint, would require only a simple form of hoist with hanging rails and metal dripping floor adjoining the tank; or, simpler still, a mere boxlike tank, in which tapered varnish and paint cans are dipped by hand, a piece of wood being inserted in the neck by which to lift them in and out. The cost of such a plant need only amount to a few shillings.

It will be convenient now to divide the subject up under three heads—(a) painting by immersion; (b) spraying by means of compressed air; and (c) other mechanical means.

Dipping.

Taking these in order, a dipping plant usually consists of a tank (preferably metal lined) which contains the paint or varnish into which the article to be painted is plunged bodily. Clearly it must be of sufficient size to hold easily the article to be dipped. In the case of agricultural machinery, farm and military waggons, etc., the size and depth have to be considerable, and in this case, as a rule, an agitating apparatus at the bottom is desirable. One form consists of a shaft passing from end to end at the bottom of the tank provided with a paddle, while over it is provided a metal frame which may be roughly described as a horizontal venetian blind, the slats of which may be turned vertical when the agitating apparatus is working. This fitting is provided with the object of preventing the paddles being clogged by the settling paint, but principally to catch any pieces of wood, nails, etc., which may accidentally find their way in. As a matter of fact, a good dipping plant does not settle out to any extent, and it is sufficient if the agitating apparatus is operated each day for twenty minutes or so before starting work.

As already indicated, for dipping such articles as iron sashes a very narrow but deep tank suffices, and in this case, as in many others, the agitating mechanism may be wholly dispensed with, because it must be remembered that the mere fact of plunging an article into the paint and immediately withdrawing it has the effect in itself of stirring up the paint.

Iron bedsteads are coated nowadays almost invariably with paint or japan by plunging the parts into japan, afterwards stoving or baking them. Iron frames of mangles and many other similar parts are also painted by dipping. Perhaps no better illustration could be given of the high degree of finish obtainable by dipping than the fact that piano cases may be finished by the method, the parts being lowered bodily into the varnish tank. Time will not permit me to give the details of the process, but I may state quite definitely that the finish is quite as good as that obtained by the use of brushes, and that the extra amount of varnish required is only about 5 per cent.

It will be understood that the article being painted remains in the paint only a few seconds, that it is then placed over the dripping floor for perhaps five minutes, and that it then proceeds along the rails for further treatment until it is finished. The question will at once occur whether this method does not produce drips, or what painters call "fat edges." The answer is, that if this occurs the paint is not properly made for the purpose. As a matter of precaution, one painter usually stands by each article as it is suspended over the

dripping floor, and with a brush removes any small drips or fat edges which occur. This labour is very slight.

Any portion which is not required to be painted may be protected by the application of a little vaseline, which can be rubbed off when the rest of the work is dry.

Spraying.

There are about a dozen different makes of paint sprayers on the market. I hardly within my province to recommend any one of these as being superior to the rest, but those interested should carefully compare the construction and first-class before arriving at a decision as to adopting either. With one or two exceptions the machines all work in the same manner. Paint, varnish, or other liquid is contained in either a cup attached to the spraying apparatus when the quantity required is small, or in a small tank connected up by tubing.

There are various forms of air compressors, ranging from a small and simple one for a single spraying apparatus up to those larger and more elaborate which are required where a number of sprayers are in use. The compressors must be designed to give an absolutely pure supply of air, free from oil and grit, and the main must be so arranged as to avoid trouble due to condensation. For the class work a suitable air filter should be fitted to the intake of the compressor; this should be of large diameter, and have a gauze screen and wad of cotton wool.

The spraying should be done in a cabinet fitted with an air exhaust. Unless this is provided the operator may be seriously injured by inhaling the fumes from the paint or varnish or the paint itself. The exhaust is usually produced by fans, and large works the exhaust main connects with all the different cabinets. This condition of masks is one which solves a great many of the problems surrounding the subject of spraying. By using masks, stencils, or both, almost any work can be done.

There are so many trades in which spraying is successfully done that it is difficult to select any one as being of special interest. A simple operation is that of painting or repainting gas-meters. In some cases some parts of such work, as for instance the brass labels and name-plates are not required to be painted. To protect them a mask of suitable shape is used. They are held in position by the stout appendage, and are readily put on and taken off.

When it is desired to paint a very large surface, such as a gasometer, or a set of iron girders, or even a long stretch of fencing, it can best be done by using a portable spraying apparatus with a pump sprayer and everything else required mounted on a platform or wheels, so that it may be moved along as the work proceeds.

As to the best paint for use in dipping and spraying, I need only say that a standard paint will not answer, as a rule, because it is not of the right consistency. Supplies should be obtained ready for use or ready to be thinned by the addition of turpentine or white spirit from firms who have made a special study of the subject.

Painting with the "Tumbler."

A few words now as to the method of painting or enamelling very small articles such as hooks and eyes, small castings

* Extracts from a paper read before the Royal Society of Arts on April 5, 1916.

ts; no better method is known to me in the use of the "tumbler," which in form is similar to an ordinary churn. In this machine are placed a number of cast or steel balls of different sizes. The articles to be treated are then introduced, together with the japan, and the machine started at varying degrees of speed. The shot carries the japan over the various articles and into the interstices. As different objects and materials require different treatments, some work will be started slowly and the speed increased to get the desired finish. The objects are then dumped out to wire screens or baskets, and shaken, when the steel balls and shot fall through the mesh, leaving the articles that have been japanned behind. The baskets are then hung in baking ovens while the balls are washed in gasoline ready for use.

Finally it is necessary to mention two important provisions which are absolutely essential to a good finish and speedy work. The first is to provide a room in which the japan and varnish is applied that is well ventilated, free from draughts and is kept at a uniform temperature. But, above all, it must be absent and the greatest care taken to exclude it. I have seen paintshops adjacent to the joinery works, and but little division between the two. The result, of course, is that specks innumerable settle upon the work, and the japan is spoiled. I would repeat, then, that too much care cannot be taken to eliminate dust.

OBITUARY.

Mr. Albert E. Smith, M.S.A.
Mr. Albert E. Smith, of London, died on January 26, after a long illness. He was fifty-four years of age, and received his early training in the offices of Messrs. G. and Steward, of Parliament Street, W., with whom he remained for over twenty years.

Mr. Charles Armstrong.
Mr. Charles Armstrong, formerly a well-known building contractor in Carlisle, died at the age of eighty-two years, after an illness of four days. He was for many years the principal of the firm of Messrs. Charles and John Armstrong, who were at one time probably the leading firm of contractors in the North-West. Mr. Armstrong, who retired from business in 1885, was for some years an active member of the Carlisle Town Council, and for many years he took an enthusiastic interest in the Cumberland Artillery, from which he retired with the rank of Major. On retiring from business he left Carlisle and subsequently held an appointment in the Office of Works.

Mr. R. L. Green.
Mr. Robert Livingstone Green, aged fifty-two, who was in practice as an architect in Derby, left home on the Wednesday afternoon of the great snowstorm, and as he did not return search was made for him all night without result. On the following Sunday morning his dead body, almost completely covered with snow, was found in a shallow ditch adjoining a field at Normanton, about a quarter of a mile from his residence. There was a slight wound at the back of the head, and it was suggested that deceased had caused it by stumbling against a fence, and that, being stunned, he sat down to recover, and eventually became numbed by the cold weather, which was due to exposure, and probably occurred on the Wednesday night. At the inquest the jury returned a verdict in accordance with the medical evidence.

ARCHITECT-SOLDIERS DECORATED.

Lieutenant J. F. Venmore.

It is officially announced that the Military Cross for conspicuous bravery has been awarded to Lieutenant J. Frederick Venmore, of the 14th Royal Welsh Fusiliers. On the night of January 30 last Lieutenant Venmore was on duty as patrol officer in front of the British trenches in France, when a sentry in the firing trench reported that three men in an advanced listening post had been wounded. Two of these men were just able to crawl back to the British lines over the barbed wire, but the third man was too seriously wounded to follow, being shot through both legs. Lieutenant Venmore volunteered to go to his assistance, and took with him a non-commissioned officer (Corporal William Williams), who is also awarded the Distinguished Conduct Medal. They went out under heavy fire over the parapet, and after great difficulty successfully brought in the man over the wire and two ditches. This brave action was succeeded by a further gallant act on the following morning, when a message was received that a man had had his arm blown off at another listening post, practically unapproachable by daylight. Lieutenant Venmore again undertook to go to his aid, once more taking with him Corporal Williams. They crawled across the open ground in the face of heavy machine-gun fire. The sufferer was reached, his wounds attended to, and he was subsequently brought to safety. Both the officer and his companion were most highly congratulated by the brigade and divisional officers. Lieutenant Venmore is a son of Mr. James Venmore, a Liverpool citizen and a justice of the peace of the city. He is twenty-seven years of age, and was educated at the Liverpool College and at Mill Hill School. He subsequently studied architecture at the Liverpool University, and was engaged in that profession in Liverpool until at the outbreak of war he enlisted as a private in the 3rd Battalion of the Liverpool "Pals." He received his commission in the 14th Royal Welsh Fusiliers in December, 1914, and proved himself a most capable and popular officer.

Major P. G. Fry.

Major Peter G. Fry, R.E., D.S.O., writes from the field, thanking the Society of Architects for its congratulations on the honour he has received of having the D.S.O. conferred on him. He modestly attributes this largely to the good work done by the officers and men of his battalion, and is good enough to say that he will treasure, as an additional honour, the letter from the Society of which he is proud to be a member. Major Fry is the first member of the Society and probably of the profession to win the D.S.O. At that time he was on the Western Front. Now he is somewhere else.

Second-Lieutenant F. D. Sowerby.

Second-Lieutenant Frank Douglas Sowerby, of the 4th Hussars, student R.I.B.A., has been awarded the Cross of Chevalier of the Legion of Honour for distinguished conduct in action.

Honours for Members of Northern Architectural Association.

At the annual general meeting of the Northern Architectural Association the Council, in their annual report, congratulated Mr. H. C. Charlewood, past-president, on the fact that his eldest son had

been awarded the Distinguished Service Cross, and Staff Captain D. Hill, member, on his being awarded the Military Cross, and Mr. W. N. J. Moscrop, student, for being mentioned in dispatches.

PRO PATRIA.

The R.I.B.A. Journal prints the following announcement:

Phillips, Louis Augustus [Associate], Sergeant, Public Schools and Universities Bn., Royal Fusiliers. Killed in action in France on March 14.

Sergeant Phillips served his articles with Messrs. Habershon and Fawckner, architects, of Lamport and Cardiff, and was afterwards assistant to Mr. John F. Groves [F.], architect to the Tredegar Estate, Newport, Mon. He was elected Associate and started practice in 1907. He was a fine all-round athlete, but will be remembered best as a Rugby football international player. He represented Wales against England and Ireland in 1900 and against Scotland in 1900-1.

In the Journal of the Society of Architects the following deaths of Members and Students of the Society are announced:

Arthur Craven Baxter, of Guiseley, Leeds, was articled to Mr. A. Marshall, M.S.A., of Otley, in 1907, and was registered as a Student of the Society in 1909. On the outbreak of War he joined the R.A.M.C., and subsequently transferred to the 4th London Field Company R.E. He was killed in the trenches on the Western Front on January 24.

Kershaw Peters, of Galway, was articled to Messrs. Gregg and Detmar, A.R.I.B.A., of London, and afterwards served in the P.W.D. Transvaal, and later as assistant with Messrs. Henderson and Pollard, of Auckland, N.Z. In 1911 he passed the Society's Qualifying Examination for Membership, and was admitted. Shortly afterwards he joined the staff of the Technical School, at Galway, as instructor in building construction, at the same time entering University College with a view of taking an Engineering Degree. He passed his first examination there with honours, and was well on his way to further success when war broke out. Although he had a young wife and child, he felt it incumbent upon him to volunteer, and he joined the Colours in November, 1914, as a sapper in the R.E., and spent the summer of 1915 on the Western Front. Early this year he had been home on leave, and was wounded shortly after his return. He died at a base hospital on February 18.

Captain W. R. Houston.

Captain William Robertson Houston, Royal Scots Fusiliers, who has died of wounds received in action, was the son of Mr. John Houston, architect, of Dunfermline. He was attending the Edinburgh University arts classes at the outbreak of war, and was a member of the Officers' Training Corps. Captain Houston was given his commission in January, 1915. He was twenty-two years of age.

To Architects on Service Abroad.

Mr. Percy S. Worthington, F.R.I.B.A., would be glad to hear from any architects on active service who have made sketches and notes of interest in the countries where they are serving and would be willing to lend them to show at an exhibition of drawings of Belgian subjects, proposed to be held at the City Art Gallery, Manchester. Mr. Worthington's address is Lombard Chambers, 46, Brown Street, Manchester.

SOCIETIES AND INSTITUTIONS.

R.I.B.A. and Proposed Central Organisation of Trade Interests.

Sir John Burnet, R.S.A., vice-president, and Mr. E. Guy Dawber, hon. secretary, were appointed by the Council to act as representatives of the R.I.B.A. at a meeting held under the auspices of the Institute of Industry at the Savoy Hotel on March 30, to consider suggestions put forward by Sir Edward Carson for the creation of a strong Central Organisation of Trade Interests.

Postponement of R.I.B.A. Prizes and Studentships, 1917.

On the recommendation of the Board of Architectural Education, the Council have postponed the competitions for the R.I.B.A. Prizes and Studentships, 1917. Candidates who under the age limit were eligible in 1915 and 1916 will be considered eligible to take part in these competitions when they are next held.

Architectural Association.

A meeting of the Architectural Association was held at No. 37, Great Smith Street, Westminster, on Monday, April 3, at 4.30 p.m. On the motion of Mr. H. Austen Hall (president) a vote of condolence was passed to the relatives of three members, Messrs. H. E. J. Davidge, Maurice Day, and Henry Wood, who had fallen in the War since the last meeting of the Association. The president read the Council's nominations for the House List for the ensuing session, and stated that formal nominations would take place at the next ordinary general meeting, which would be held on May 1, when it would be competent for any two members to nominate further candidates.

It was announced that the late Mr. H. L. Florence had bequeathed the sum of £1,000 for the purposes of the Association and a further £1,000 to found and provide an annual prize to be described by or associated with Mr. Florence's name.

Society of Architects: Joint User of Membership Initials.

The articles of association of the Society of Architects provide that a member practising in partnership with an architect who is not a member of the Society, or under the title of a firm, shall not after the joint names or the title of the firm use the initials M.S.A. There is, however, no regulation governing the joint user of the initials where each of the partners is a member of the Society. The Council having been asked for a ruling on the point have expressed the view that it will be proper in such cases to follow the custom of using the initials M.M.S.A.

Liverpool Architectural Society.

In the annual report of the Council of the Liverpool Architectural Society for 1915-16 it is stated that twenty-nine Fellows and Associates, or more than one-fourth of the members of the Society, are now serving with the Forces.

A scheme drawn up by the Architects' War Committee for the purpose of making enquiries into the qualifications of architects, and recommending them for such war service appointments as they seemed most suited for, resulted in about seventy applicants being interviewed by the president and the officials of the Society and the application forms forwarded to the

Central Committee in London. It is not at present known how far the scheme has succeeded in achieving its objects.

In a letter from the secretary of the R.I.B.A. it was mentioned that the president of the Institute had made arrangements with the War Office whereby the local military authority when in need of professional assistance would seek the advice of the president of the local Society. In Liverpool, however, no applications for such assistance have been made.

With regard to town planning the Council say that they are still of opinion that there is but little prospect of any material results being obtained from the action of independent local societies, and they add that "if architecture is to take its proper place in regard to town planning the Council consider it is necessary that an architect should be professionally engaged on each scheme during the early stages of its preparation, and this is a condition which can only be brought about at the instance of the Local Government Board."

Sheffield Master Builders' Association.

At the sixty-second annual dinner of the Sheffield Master Builders' Association, which was held at the Builders' Exchange Sheffield, Mr. Charles A. Jones (president) in the chair, there was an attendance of about a hundred.

Alderman W. C. Fenton, in proposing "The Federation of Building Trades Employers," spoke of the great shortage of houses, and said the possibility of adopting new and cheaper materials and securing economies in the design of cottages was attracting much attention. The Sheffield City Council had done something in this direction by adopting modified bylaws. The modifications would in no way impair the environments of the people who had to live in the houses.

The Chairman, in reply, said that one of the serious difficulties which they had to face, owing to the war, was that of estimating for work. If they attempted to cover themselves for the probable increases in the cost of material and wages, their tenders would necessarily be extremely high. This had been under the consideration of committees for some time, and they had also had meetings with the architects. They considered that the fairest method at present would be to tender for work on current prices, and that fluctuations in the market above or below a certain percentage—say 5 per cent.—should be met by increases and reductions respectively. He thought this would be a fair risk, as, in the ordinary course of things, it was not likely that prices would vary much more than 10 per cent. The Architects' Society were recommending the careful consideration of this system to their members who were preparing for new work, and the corporation had inserted in their building contracts a clause which would operate in a somewhat similar manner. The Association must compliment the corporation on facing the question of cottage building. The modifications of the by-laws would really reduce the cost of building. Turning to another topic, he said that the time had come when the system of apprenticeship should be reorganised to suit modern conditions. They must make the apprenticeship of a youth more attractive. Employers would do very well to take more personal interest in their apprentices. They must take the drudgery out of the apprentice's life, provide him with a suitable kit of tools, and, instead of sticking to a fixed wage, they must, when they saw a youth making good progress, pay

him good wages, and give him an incentive to work and to learn. They should send their apprentices to the local technical schools two or three mornings a week, and offer suitable rewards to successful students.

THE GRANITE TRADE AND TONNAGE EMBARGO ON IMPORTS.

Sir William Guy Granet, of the Import Restriction Department, received on March 30 a deputation representing the Aberdeen Granite Supply Association with reference to the Government prohibition of granite imports from Scandinavia. The deputation consisted of Lord Provost Taggart and Treasurer Stewart. The question, says the "Aberdeen Evening Express," is one vitally affecting the Aberdeen granite industry, which depends largely upon imports of Scandinavian granite for monumental work and for slabs and fronts. The members of the deputation fully explained the situation, and pleaded for some restriction of the embargo order that the granite industry might be carried on without serious interruption.

Sir Guy Granet replied that the shipping tonnage of the country was required for other things.

Lord Provost Taggart, however, pointed out that the vessels which carried granite from Scandinavia belonged to the Norwegian quarry-owners, who might ship the granite to other countries and so kill the Aberdeen industry, while depriving the British Government of their tonnage export purposes.

A prominent member of the granite trade stated to an "Express" representative that unless there was some relaxation of the prohibition the industry would be crippled to a serious extent. The Aberdeen monumental trade was now mainly dependent upon foreign material, which had taken such a hold upon the market that the home granite was a secondary consideration in the eyes of the buyers. More than three-fourths of the granite worked in Aberdeen came from Scandinavia, and under normal conditions huge stocks were readily available. The number of firms who would be affected if the foreign supply were entirely cut off would be about 1,100.

The Government, of course, have absolutely prohibited the importation of granite. Under the usual arrangement a vessel bringing granite to this country returned to Scandinavia with coals, but the Government have now laid down that the export of coals in return for granite will not be allowed. Any vessel bringing granite to Aberdeen, therefore, would have to return in ballast, and as a result granite merchants would have to pay a very high freight for any material they imported.

London Labour Unrest.

On April 3 the London Master Builders' Association met representatives of the Stonemasons' and Plasterers' Trade Unions in conference at Kohinoor House, Kingsway, on the demand put forward by workers in the building trade for an annual round wage advance of 2d. per hour and a new schedule of working conditions. An agreement was reached, and the deal was sealed with a similar one by other grades in the industry, will, it is understood, be submitted to the Conciliation Board, with a view to success in dealing with such issues and assurance of prompt and satisfactory settlement of this new dispute.

TRADE AND CRAFT.

Fittings for Industrial Lighting.
Simplex Conduits, Ltd., have just issued a list of lanterns and reflectors suitable for industrial lighting. Many types are shown, each specially designed for its own particular purpose. The enclosed lanterns and half-watt lamps are of pleasing design, and are strong and well finished. There are also illustrated indirect and semi-indirect fittings suitable for offices and other public positions where the glare from high-intensity lamps would be an objection. In the list a special point is made of the expensive anti-Zeppelin reflectors, of which, we are informed, the Simplex firm have sold many thousands within the last few weeks. The new concentrating reflector specially designed for workshop and local lighting is a useful and inexpensive type. There are also shown large reflectors for the larger types of half-watt lamps, specially made for positions where it is proposed to replace arc lamps.

A Useful Business Card.
A card, about 15 in. by 11¼ in., corded and hanging in the office, and printed on both sides, contains much valuable business information relating to foreign countries. Compiled from particulars supplied by foreign consulates, etc., and published (price 6d., post free 8d.) by the Caxton Translations Institute (the Engineers' Translations Institute), Caxton House, 111, Chancery Street, Westminster, the card supplies particulars of the language, population, imports, capital city, exports, principal ports, monetary unit, metallic standards, paper currency, weights and measures, etc., of all the chief trading coun-

tries, which are arranged in alphabetical order. A table for the mutual conversion of weights and measures from the metric to the English system, and vice versa, is a very useful feature.

Waterproofing Walls below Ground-level.

The situation of any habitation is considered unhealthy where the floor level is lower than the ground level. Especially is this so when there is filtration of water into the building. We understand that the walls of a Sunday school at Pudsey, near Leeds, built about 8 ft. below the ground-level, became so saturated as to rot the dado, floor-boards, and joists. These walls have since been rendered in Puddoed cement, and we hear that, although the weather has been exceptionally severe the interior is now perfectly dry.

The Merits of Heating by Gas Fires.

In a recent lecture on economy in coal consumption, given at the Royal Institution, Dr. William A. Bone, F.R.S., Professor of Chemical Technology at the Imperial College of Science and Technology, said that "the continued use of more than 30,000,000 tons of raw coal, instead of coke, semi-coke, or gas, as domestic fuel, means that we are deliberately sacrificing, for the sake of a big blaze in the fireplace, the whole of the ammonia, tar, benzol, naphtha, and other by-products, the value of which would in the aggregate amount to many millions of pounds per annum, and at the same time we are unnecessarily adding to the atmospheric pollution of our great towns and cities by the smoke which goes up our chimneys." The modern gas-fire is not only efficient, but hygienic.

NEW BATHS AT NOTTINGHAM.

The Duke of Portland has opened new baths in Muskham Street, Nottingham, to be known as the Portland Baths. Upon the site of the old tram stables the city architect (Mr. A. Dale, Licentiate R.I.B.A.) has raised a building of red brick, with stone dressings in the façade, and two covered ways by way of frontage, they comprise a swimming pond, 100 ft. long and 30 ft. wide, sixteen private baths for men, and seven for women.

The interior walls of the swimming hall are constructed of white facing bricks with red bands, while the floor and sides of the bath itself are of white glazed bricks with grey bands. The gangways round the swimming pond—which has been built 100 ft. long to facilitate the measurement of racing distances—are paved with grooved non-slip quarries, terra-cotta in colour, and the distances required for polo matches are indicated, while a line of grey bricks shows the centre of the playing space. Two features new to Nottingham baths have been installed—a modern diving stage, built upon the model of that in use at the Royal Automobile Club in London, and collapsible dressing boxes. The diving stage is provided with four spring boards at heights of 4 ft. 6 in., 8 ft. 9 in., and 12 ft. 9 in. above the water level.

The fitting of collapsible dressing boxes, sixty-seven in number, so constructed as to fold back into the walls, has been undertaken with a twofold object. It provides the opportunity for excellent seating accommodation at galas, and enables the Baths Committee to carry out their policy of adapting the swimming hall for meetings and entertainments during the winter months.

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PUBLISHER'S ANNOUNCEMENT.

THE question of the cost of Advertising is governed entirely by the circulation of a publication. The prices for small Advertisements enumerated below are framed upon the lowest possible basis in order to allow the use of the columns of the Journal for "Wants," &c., at a figure well within the reach of everyone.

Advertisers are purchasing the circulation of a paper in buying space for their announcements, and we are able to announce that "The Weekly Nett Sale of The Architects' and Builders' Journal is larger than that of any other Architectural Journal."

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4 lines (about 28 words) 1s. 6d.; 3 insertions, 3s.

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The object of the Professional Employment Committee is to provide temporary paid work for British architects who are entirely dependent upon their profession for their living, and whose present difficulties are due entirely to the war. Applications can only be considered from architects who are ineligible for military service and unable to obtain War work of a professional nature. Enquiries should be addressed to the Honorary Secretary of the Committee at 28, Bedford Square, London, W.C.

DRAUGHTSMAN wanted for aeroplane work; any man capable of adapting himself to above may apply; applications treated confidentially; write to your nearest Labour Exchange mentioning this paper and No. A1619; no person on Government work will be engaged. 768

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ARCHITECTS' BENEVOLENT SOCIETY.

Founded 1850.

The Annual General Meeting will be held in Rooms of the Royal Institute of British Architects on Tuesday, the 11th April, 1916.

The President, Mr. Ernest Newton, will take Chair at 5 o'clock.

The attendance of contributors particularly requested to receive the Report, the Balance Sheet,

W. HILTON NASH, Hon. Treasurer.
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and
THE QUANTITY SURVEYORS' ASSOCIATION,
Caxton House, Westminster.

Sirs,— 29th March, 1916

We, The North-Western Federation of Building Trade Employers of National Buildings Society's Parsonage Manchester having printed our Year Book and Directory published June 1915, and circulated amongst the members of our Federation an Article entitled "A Method of Measurement for Plasterer's Work," the copyright of Joint Committee of your Institution and Association respectively desire to express our regret to apologise to such Committee and to you for infringement of your rights which infringer however was not deliberate on our part the circulation of the Article amongst our members but in fact made under the belief that we were entitled to so circulate it.

We have to-day handed over to your Solicitors all copies now remaining in our possession of said Year Book and Directory containing Article and we hereby undertake and agree to repeat our action.

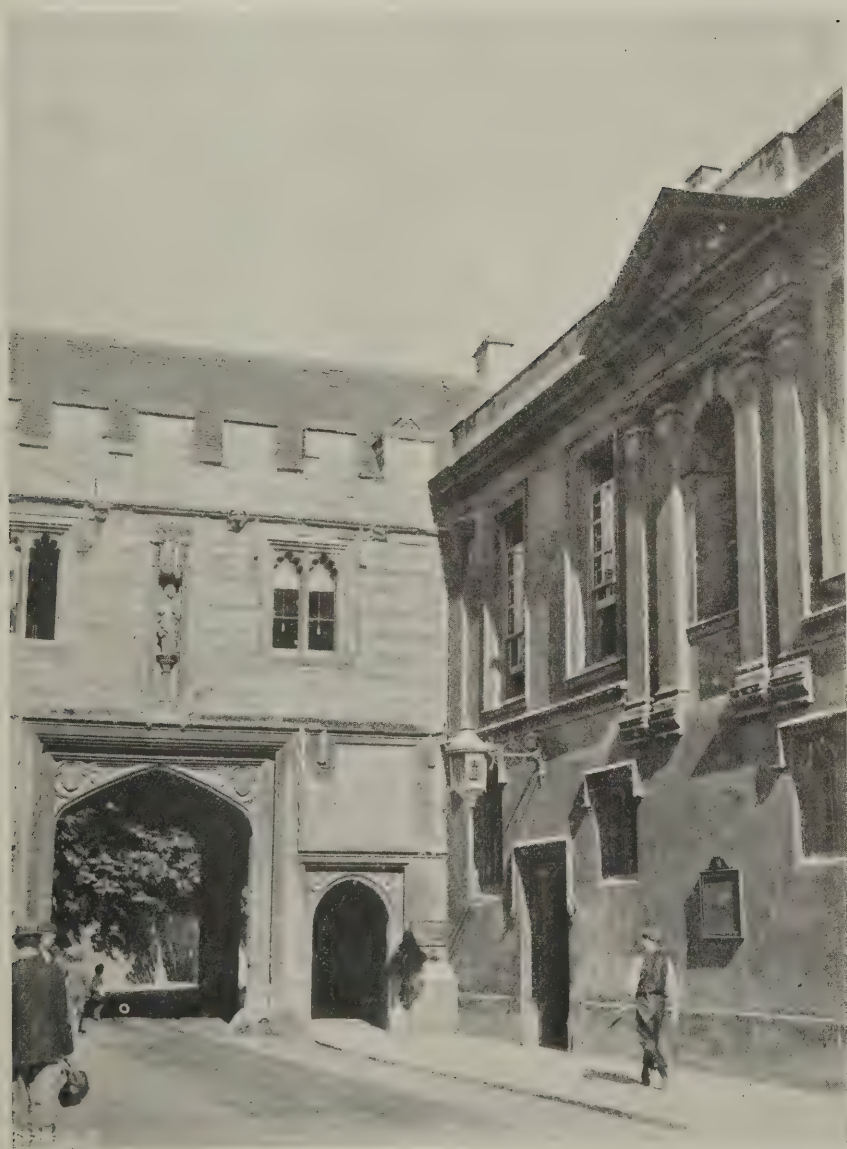
We further agree to publish this apology in next issue of our Year Book and assent to inserting the same in three professional papers selected by you. We also agree to pay to your Solicitors all costs which the Institution and Association have incurred in the matter including costs of your publishing this apology in the professional papers.

Yours obediently,
WILLIAM TINKER, President.
SAM. HIGHAM, Secretary.

THE ARCHITECTS' & BUILDERS JOURNAL.

Wednesday, April 19, 1916.

Volume XLIII. No. 1111.



THE MONASTIC GATEWAY AND THE TOWN HALL, ABINGDON.

THE ARCHITECTS' & BUILDERS' JOURNAL.

APRIL 19, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1111.

EDITORIAL.

A TELEGRAM from Madrid states that "owing to the high prices of material, all the builders of Spain contemplate a lockout, which would throw three hundred thousand men out of work." This use of the word "lockout" is a reminder that the term has a wider significance than that commonly attached to it in this country, where it normally denotes hostile action by employers against employees. When work is suspended for reasons apart from industrial strife, the fact is usually indicated by a distinctive expression—that the works are "closed down," a quaint phrase that seems to have been imported from America; our own earlier figure of speech being that works or factories were "shut up," or simply "closed," without any fantastic addition of "up" or "down." That Spain, in common with most other countries, is suffering acutely from the influence of the war is evident from this announcement, which was followed closely by news that the Germans had wantonly and deliberately insulted her flag. Apparently Spanish builders are not a wealthy class, or they would have kept things going, as British builders have so often done, by drawing upon their reserves. It is notorious that, during the unparalleled depression of five or six years ago, many large building firms in Britain kept open their works mainly for the benefit of the workers, thus following the example set in his day by Robert Owen, who, however, in running his textile mills at a huge loss, was a philanthropist confessed. But the Spanish builders, even if they have the will, have not the power to make such sacrifices. They will have the less cause to regret the ingratitude of the workers.

* * * *

As the inveterate enemies of all that is beautiful, the Germans would exult in an opportunity of playing havoc among the monumental buildings of Spain. Besides, there would be an excellent excuse, as German logic goes, in the fact that Spain is rather rich in venerable fortifications. There are, for instance, the very interesting old brick castles at Coca, near Segovia, and at Medina del Campo in Leon, a few miles south of Valladolid. At Avila, the ancient fortifications are as romantically pictorial as only old Spanish military works can be. Of a much later date—1530—the arch of Gonzales at Burgos, although it be but "semi-military," has also what the enemy airman would regard as "the fatal gift of beauty." Then there are, in various parts of Spain, ancient bridges, which, like the Alcala bridge at Toledo, and the long bridge near the Mosque at Cordova, show an interesting blend of Roman and Moorish influences. Of the more modern work in Spain it has been said, in a generalisation that is too sweeping, that it represents "the utter abandonment of good taste," and betrays the lack of any attempt at coherent design. It is racy of the soil in its wild exuberance; and much of the character of the people is expressed in "the grandiose, pompous,

theatrical effects which are so interesting in the of the Plateresque." It is mere justice to add that Spanish architect knows how to manage profuse decoration, and is able to redeem it from the absolute barbarism into which it would easily degenerate in dexterous hands, uncontrolled by the authentic na spirit.

* * * *

An illustrated description, in the March issue of "Architectural Review," of the new buildings Bloomsbury Square which Sir John J. Burn R.S.A., has designed for the Institute of Chemistry has stimulated interest in the series of chemical laboratories that have been added to the London University College, Gower Street. The laboratories have a total area of about 17,500 sq. ft., and are disposed on four levels, namely, in the basement and on the ground, first, and second floors. Particular attention has been devoted to facilities for research work, more especially in connection with physical chemistry. It is understood that a sum of £14,000 is required immediately to equip the laboratories, and that a further £6,000 will be needed for development purposes within the next three years. It is also stated that of this sum Sir Ralph Fox, already a generous patron of the scheme, has promised a quarter provided the remainder is subscribed quickly. This appeal provokes some rather furious thinking. Chemical research, and a more general diffusion of chemical knowledge, being indispensable to national prosperity, it is rather distressing to find that the provision of facilities for study is so largely left to private effort. It should be, and we trust will be, regarded as a matter of national concern, and national funds should be (as to some extent they are already) devoted to Chemical and physical laboratories, already regarded as a necessary provision in every considerable school must be everywhere and in every way encouraged to full development, and alert architects are no doubt keenly interesting themselves in the movement the success of which their specialised skill should enable them to contribute very materially.

* * * *

If "Truth, crushed to earth, shall rise again," so also with Fallacy. One might have thought that the works-department bogey had been finally laid to rest years ago by the London County Council; but perhaps the particulars have not yet penetrated to Newcomen where a member of the City Council has proposed a resolution: "That this Council take immediate steps to set up a thoroughly equipped works department to carry through, without the assistance of private firms, building schemes taken up by this corporation, that a committee be formed with instructions to make the necessary arrangements and report to this Council." Naturally this resolution was lost; but that there were ten stalwarts who were not deterred by its mis-

your is a fact that should warn the opponents of municipal trading to keep their weapons keen. If Mr. Davidson, of Leeds, who some few years ago collected, for the use of master-builders, and for the enlightenment of corporations, a mass of evidence as to the disastrous consequences of the "direct employment of labour," happens to have by him any copies of his very convincing statement of the case for negation, he could extend his excellent service by distributing them among the reactionaries of Newcastle, who were apparently in agreement with the extraordinarily ready proposition of the mover of the resolution that whatever any private firm could do, a corporation could do better." Can he have heard of the L.C.C.'s experiments in brickmaking at Norbury? And does he know why the L.C.C. Works Department was abolished?

It is a point of patriotism not to grumble about taxation. Nevertheless, the taxation of sewers seems to justify the mild protest that has been lodged against it at the annual meeting, in Edinburgh, of the Convention of Royal Burghs. As a temporary expedient, even of the exigencies of a stupendous occasion, the tax might very well be allowed to pass without comment; but it is no doubt wise to put forward, with the immediate object of placing it on the records for future reference, a formal protest against an incidence of taxation that certainly cannot be justified upon any ground other than that of war-time emergency. Sir Thomas Hunter, the Town Clerk of Edinburgh, in his report to the Convention, said: "Sewers had been put on the valuation roll as lands and heritages, and the value entered in the roll had been held to be available for local rating purposes. The view taken by the Treasury was that 'value' for rating purposes must of necessity mean also 'value' for assessment to income-tax." It followed that the Inland Revenue authorities had charged corporations with income-tax on the value of their underground sewers. . . . It was still open to corporations to fight the question of income-tax liability for the value of sewers, and it was absurd to say that income-tax was assessable on a subject which was incapable of producing rent."

That the legal view happens in this instance to coincide with the moral aspect is one of those lucky accidents that occasionally occur, to the confusion of logicians; but the strength of the case against the taxation of sewers does not depend on legality. It resides in the very obvious fact that a tax or a law operating as a restraint of the public health is essentially immoral; and, clearly, if sewers are to be taxed in proportion to their capacity (which may be assumed to bear some relation to their efficiency), sanitation will be directly encouraged and checked, with respect not merely to sewers themselves, but also to the several related operations of house-drainage and plumbing. This is the effect that, at all events, should not be tolerated a moment longer than national necessity dictates. To secure a clear understanding that the burden will be removed at the earliest possible moment seems to be, in this as in so many other instances, all that can be reasonably expected in the extraordinary circumstances of the times.

To those who have in charge the protest against the assessment of sewers for income-tax we commend for its excellent tone of this passage from the thirty-second annual report of the Institute of Builders: "Builders realise the continued necessity of supporting the Government in every possible way, and that it must be assisted and not hindered in its efforts to meet so unprecedented a situation, however much the general occupations may suffer." To how great an extent the building industry is suffering—on its professional at least as much as on its practical side, and

even more than any other industry that could be named—is a subject upon which one does not care to dwell; and that the suffering is being borne with the splendid spirit that this extract reveals will stand for a not ignoble record in the annals of patriotism. Not that the organised building-trade employers have remained completely passive and inert. They have done better than that, and their attitude is thus explained in the official organ of the National Federation: "Excepting in cases where it was clear that the Government had not fully considered the matters with which they proposed to deal, or did not sufficiently appreciate the effects of particular provisions of their measures, no concerted action by employers was taken." Architectural organisations, in exhibiting the same forbearance, have perhaps carried it to an extreme, forgetful that sympathetic criticism is infinitely more valuable than austere abstention from it.

A Glasgow correspondent courteously indicates an important omission (which was of course purely accidental) from the list of architect Associates of the Royal Scottish Academy given in our issue of April 5 in recording the election of Mr. James A. Morris. That list should have included Mr. Alexander Nisbet Paterson, M.A., A.R.S.A., F.R.I.B.A., who, elected some five or six years ago, had a dual claim to the distinction, since, besides being an architect of marked ability, he had exhibited admirable water-colours at the Salon, the Royal Academy, and elsewhere, and was no novice in the use of the modelling tool. At the Ecole des Beaux-Arts he studied architecture under Pascal, and decorative art under Galland. Afterwards he was for some years in the Glasgow offices of John J. Burnet (now Sir John Burnet) and Son, and later he came to London as principal draughtsman to Mr. R. W. Edis, F.S.A., from whose office he went to that of Mr. (now Sir) Aston Webb. During this period he seized every opportunity of sketching in France, Italy, and Holland, as well as in England and Scotland, and the Godwin Bursary gave him the opportunity of visiting the United States. He began, in 1892, in Glasgow, a practice which he rapidly developed, and he has done much important domestic work in the West of Scotland, besides ecclesiastical, school, and business work. Some of it was illustrated, and a portrait of the architect was given, in our issue of November 1, 1911. Mr. Paterson is a member of council of the Glasgow Institute of Architects, of which he was president in 1912-13, and he is a member of the council of the R.I.B.A., and a governor of the Glasgow School of Architecture.

By the fortune of war, the freehold site purchased by the Shakespeare Memorial Committee is to be occupied not by the Shakespeare Memorial Theatre, but by the Shakespeare Hut, to be erected by the Young Men's Christian Association from funds which the Memorial Committee hope to supply. In the circumstances this is perhaps the best temporary use to which the site could be put. As it is very far from being an ideal site for the ideal theatre of our hopes, there is the less cause for regret at the diversion to other purposes; while the collapse of the original scheme, lamentable though we may feel it to be, is best dismissed with the "patient shrug" of which the many vicissitudes of war-time have given us the ready knack. When it was announced, rather too promptly upon the outbreak of the war, that the building project was to be suspended, we expressed the opinion that it would be more to the credit of the national spirit to proceed in spite of adversity, and so to produce a monument not only to the genius of Shakespeare, but to the invincible courage and determination of the race that produced him. We adhere to that view, quixotic though it may seem.

"THE THEATRE" AND "THE GLOBE:" A TERCENTENARY REMINISCENCE

NEXT week should have seen the opening of the Shakespeare Memorial Theatre, but the project, though not killed by the war, is on the casualty list. For the present it remains the theatre of our dreams, the ideal Temple of Thespis, all glorious without and within, outshining all other theatres as Shakespeare outshines all other dramatists, such a building as no mortal architect can ever create out of mundane materials. Prospero should beckon it into being with his wand, beating time to sweet and solemn music.

Some "fortunate-unhappy" architect is spared the punishment that would have awaited his inevitable failure to materialise our visions (diverse and indistinct) of what the Shakespeare Memorial Theatre ought to be. If he had built it of blocks of solid gold and garnished it with rubies and mother-of-pearl; he should not have satisfied our inordinate demands; and, indeed, he would be in less parlous case if he had made it simply and graciously Greek. It needs must be Greek, or the stones would cry out upon him.

Shakespeare himself had to be content with a very shed-like housing of his plays. "The Theatre," as it was called, because it was the only theatre in London, was probably a mere circular enclosure of wood; perhaps reared on a brick foundation, and the auditorium had no roof. James Burbage, who built it, was by trade a joiner, as well as an astute actor-manager, and it is more than likely that he was his own architect. Its cost was apparently a thousand marks, or rather less than £700, and the original lease of the land was granted in 1576.

It is pretty plain that, in making his wooden enclosure and calling it a theatre, James Burbage had less in mind the comfort of his audience than the object of charging for admission. Until he conceived this brilliant idea, the bands of strolling players who were not regularly attached to the house of some great lord were dependent for their earnings on what they could get by "sending round the hat," in the manner of the "Punch-and-Judy" man, whose appeal is irresistible to those who remember that his play, as a degenerate survival of the ancient "morality" or "mystery" of "Pontius Pilate and Judas Iscariot," long antedates Burbage and Shakespeare.

Giles Allen, from whom Burbage had his lease, was of the ancient order of grasping landlords. His front name might have suggested that of "Sir Giles Overreach." In the lease it was stipulated that if within ten years Burbage spent £200 on the property, he should be entitled to an extension of the term, and should become the owner of the materials of the building. But when, in due time, a new lease was prepared, Allen refused to execute it. Probably he was acting under the influence of the Corporation of the City of London, who wanted to end the existence of the theatre.

James Burbage having died, his sons took an extraordinary means of furthering the wishes of the Corporation and of circumventing Allen. In December, 1598, or January, 1599, having heard that Allen intended to demolish the theatre and appropriate the materials, the Burbages anticipated him in both particulars. They engaged Peter Street, builder and carpenter, to pull down the building; and this was the manner of it, as described in language too quaint to be neglected: Divers persons, to the number of twelve, did "ryoutously assemble themselves together, and then and there armed themselves with dyvers and manye unlawfull and offensive weapons, as namelye, swordes, daggers, billes, axes, and such like, and soe armed, did then

repayre unto the sayd Theater, and then and there armed as aforesayd, in very ryotous, outragious and forcyble manner, and contrarye to the lawes of your highnes realme, attempted to pull downe the sayd Theater; whereuppon divers of your subjectes servauntes, and farmers, then goinge aboute in peaceable manner to procure them to desist from their unlawfull enterpryse, they the sayd ryotous persons aforesayd, notwithstanding procured therein, with greate vyolence, not only then and there forcyblye and ryotouslye resisting your subjectes servauntes, and farmers, but also then and there pulling, breaking, and throwing downe the sayd Theater in verie outragious, violent, and riotous sort to the great disturbance and terrefyeing not only your subjectes sayd servauntes and farmers, but divers others of your Majesties loving subjectes there neere inhabitinge; and having so done, then alsoe in most forcible and ryotous manner they did carrye awaye from thence all the wood and timber thereof unto the Bancksyde in the parishe of Marye Overyes, and there erected a newe playhouse with the sayd timber and wood."

The new playhouse built from the old materials was, of course, Shakespeare's "Globe."

The Globe was burnt down in 1613. Of its design, construction, and equipment, some idea can be formed by referring to the very interesting contemporary restoration of the Fortune Theatre by Walter H. Godfrey, in the "Architectural Review" in 1908. For the Fortune in Cripplegate was many of its details modelled upon the Globe, and was probably built by that same Peter Street who demolished the Theatre in Finsbury so "ryotouslye," and, no doubt, re-erected the "wooden timber" to form the Globe on Bankside. Happily the original contract, dated 1599-1600, for the building of the Fortune is preserved at Dulwich College, a foundation that owes its existence to the success of the Fortune Theatre under the management of Philip Henslowe and Edward Alleyn. In this document, which is almost of the character of a specification, there are repeated references to the Globe, and it is possible to deduce from it the probable form, with and without, of both theatres; more especially since the departures from the model were expressly indicated.

One important difference between the Globe and the Fortune was that whereas the former was circular (some think it to have been octagonal), the latter was square on plan, like its prototype, the galleried inn-yard. It is specified that the Fortune stage was to be 43 ft. wide, and that the "stage or cover" was to be tiled and provided with a lead gutter brought back to the rear of the stage. Above the centre of the lords' boxes or minstrels' gallery was an upper stage, which might serve as Juliet's balcony, or, by turns, as a bedroom, a counting-house, a shop, a study, a counting-house, a tomb, as a tained recess or an open corridor. From the enclosing roof rose a timber turret from which the trumpet signalled to the public that the performance was about to begin. In Mr. Godfrey's ingenious conceived restoration, the platform stage (which was partly railed) is a fixture, thus marking a definite dedication to the drama; for in earlier theatres the stage was removable, to provide an arena for sword-and-buckler play, wrestling bouts, or bear-baiting.

There was no scenery in the Elizabethan theatre; this was introduced into the public theatres during the Commonwealth; but Inigo Jones had long previously provided sumptuous settings for the court masques in which he and Ben Jonson so often operated and quarrelled. And it was Inigo Jones who invented the proscenium. J. F. L.



MONUMENTS. XVI.—MONUMENT TO COMBATANTS OF FRANCO-PRUSSIAN WAR, 1870-71, AT CAEN.
AUGUSTE NICOLAS, ARCHITECT.



MODERN DOMESTIC ARCHITECTURE (SERIES II.). XXXII.—TWO CHIMNEYPIECES.

H. BULKELEY CRESWELL, F.R.I.B.A., ARCHITECT.



MODERN DOMESTIC ARCHITECTURE (SERIES II). XXXIII.—"IDSWORTH HOUSE," HORNDEN, HAMPSHIRE: NEW DRAWING-ROOM.

H. S. GOODHART-RENDEL, ARCHITECT.



MODERN DOMESTIC ARCHITECTURE (SERIES II.). XXXIV.—“IDSWORTH HOUSE,” HORNDEN, HAMPSHIRE: NEW ENTRANCE HALL.
H. S. GOODHART-RENDEL, ARCHITECT.

THE PLATES.

Monument of 1870-71 at Caen.

LL over France there are monuments to those who fell in the Franco-Prussian War of 1870-71, and among the best is the one at Caen, shown on the plate. It is a striking design of the Neo-Grec school, and has both the merits and the faults of that school—merits in point of vigour and freshness, faults in point of a certain archaic crudity, as, for example, in the imitation of the obelisk-column, and the beast above it. The "immortal" wreaths at the base of the monument would well be spared; they are distracting. It is curious to what a great extent these wreaths are imitated in France, for they have not the sentimental interest and beauty of wreaths made of real flowers and leaves, whose haphazard disposition on a monument may be pardoned as merely ephemeral objects. These "immortals" are as lasting almost as the monument itself, and, granting their use permissible, they should be arranged definitely in keeping with the general design.

"Idsworth House," Hampshire.

This house, originally built by Ambrose Poynter in 1849, has recently been extensively altered within, and a porte-cochère and other features added without, to the design of Mr. H. S. Goodhart-Rendel. Ambrose Poynter, it may be noted in passing, was one of the first exclusive Gothic and Elizabethan architects—a sort of inferior Salvin. He designed the early days St. Katherine's Hospital, Regent's Park, restored the Maison Dieu at Dover before Sir George was engaged on the building, and built several ugly churches, of which three are at Cambridge and two are in London—one in Victoria Street, the other, for the French Protestants, in Shaftesbury Avenue). The materials of the old house are red brick, coloured and tuck-pointed with

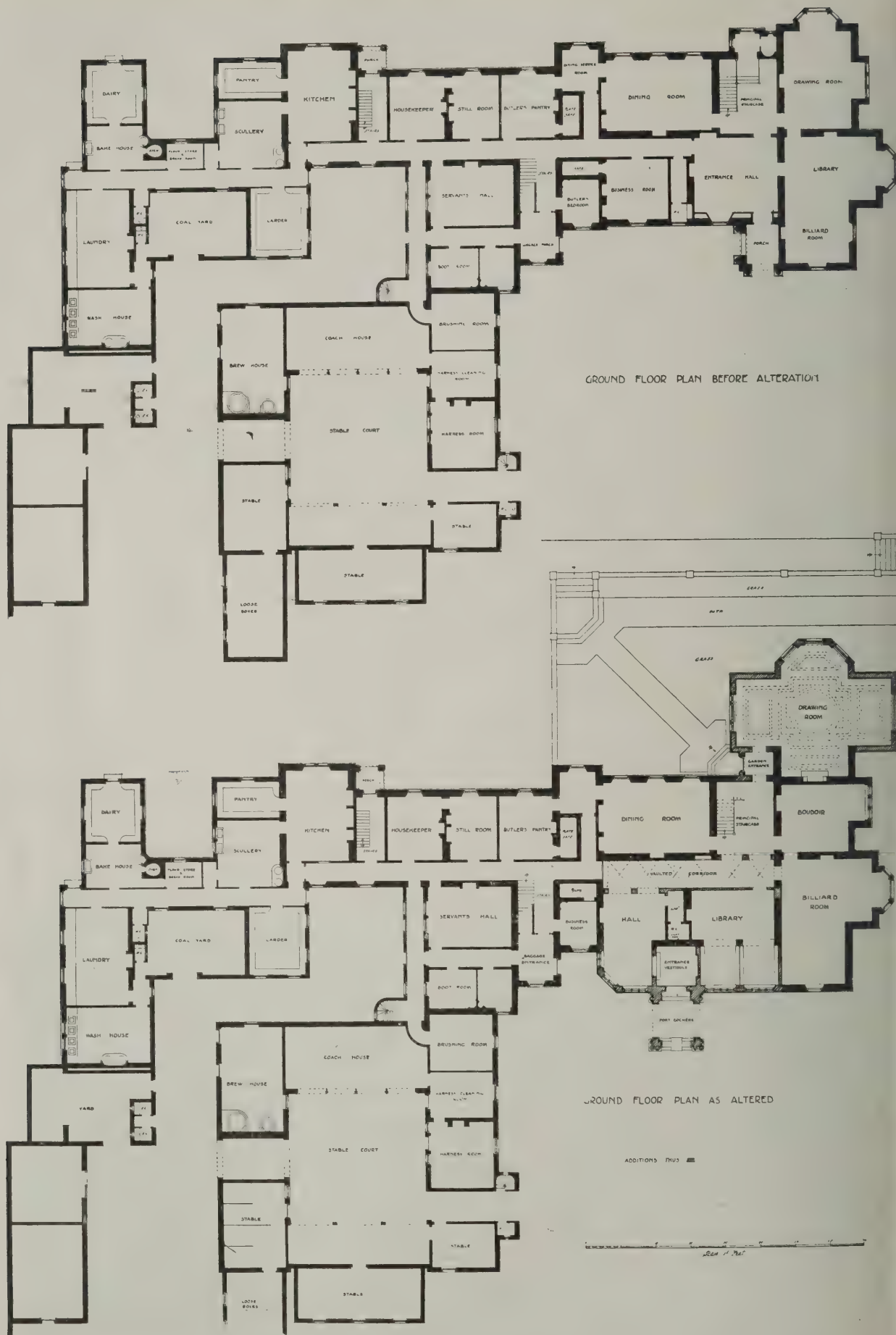
black putty, Portland stone dressings, and purple slates on the roof (the weather tiling on the upper storey is a recent expedient against damp). The interior decoration comprised the usual geometric ceilings of the date, with dark-stained oak joinery and marble chimneypieces of uncertain style. The object of the alterations was to obtain a drawing-room and a library of adequate size, to improve the lay-out of the house, and to provide a porte-cochère. The plans on the next page show what has been done. The materials used are brick with stone dressings to match the old work, chalk for an interesting vault over the porte-cochère, and oak joinery generally. The chimneypiece in the drawing-room is an old one; the others are of stone and black marble. Messrs. Norris, of Sunningdale, were the builders.

Details of St. George's Hall, Liverpool.

The great hall of St. George's Hall, Liverpool—the work of Elmes and Cockerell—occupies the central portion of the building. It has not the monumental grandeur that the exterior displays, but, nevertheless, possesses great architectural interest. The hall is 169 ft. in length, about 100 ft. wide (including the side galleries), and 83 ft. high to the crown of the vault. The design is generally described as a reproduction of the tepidarium in the Baths of Caracalla, but the differences are considerable. Blouet's great work on these baths had been published in 1828, and Elmes was no doubt familiar with it. He adopted the same dimensions on plan, but divided the length into five bays instead of three, and much improved the design of the vault. The granite columns rest on a grey granite plinth, and various native marbles are used for the balustrades of the galleries. The small arched openings between the bays are very effective in helping to maintain the scale of the interior, and serve to show

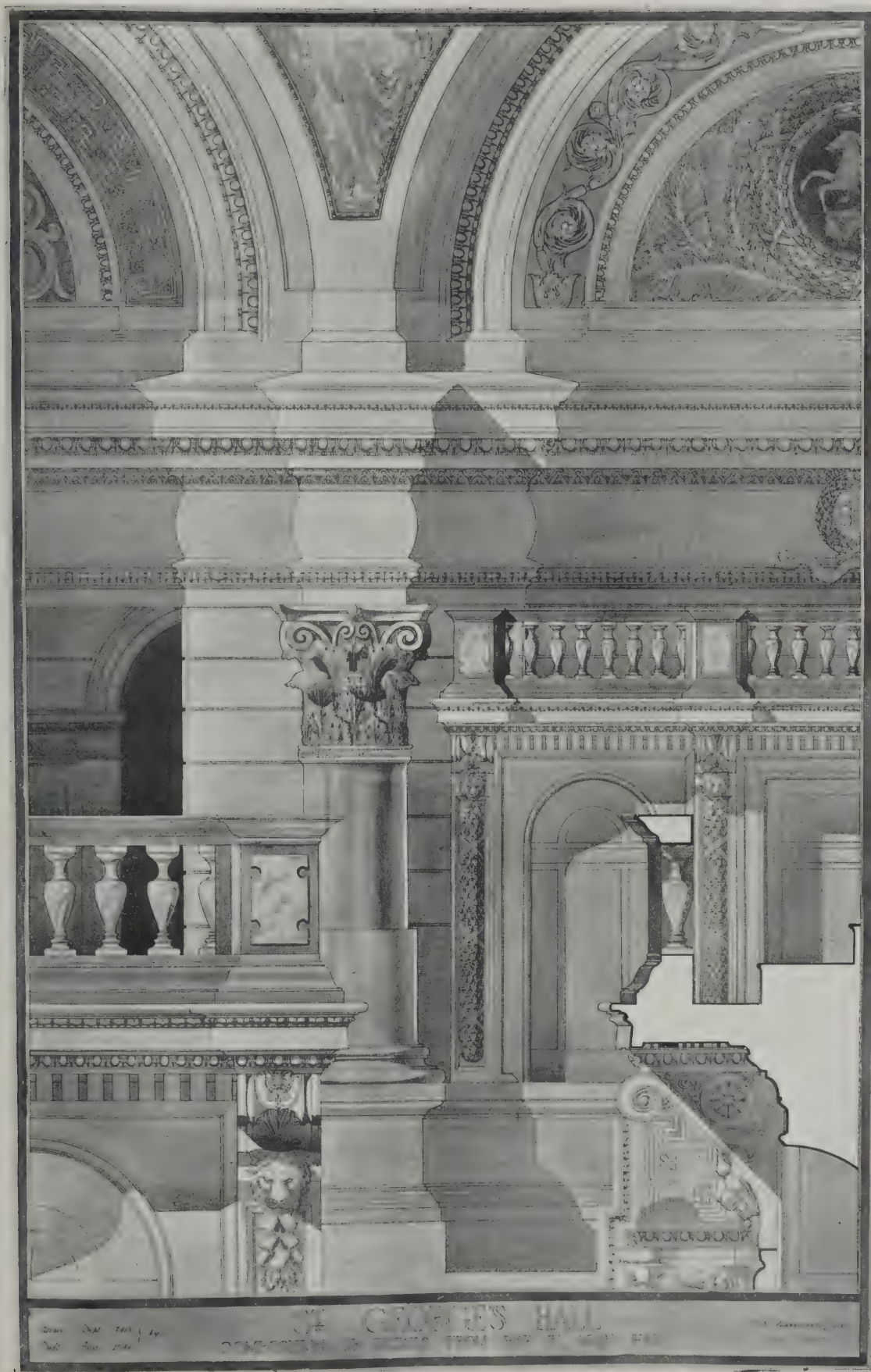


"IDSWORTH HOUSE," HORNDEN, HAMPSHIRE: VIEW OF ENTRANCE FRONT SHOWING NEW PORTE-COCHÈRE, &c.



"IDSWORTH HOUSE," HORNDEAN, HAMPSHIRE: PLANS OF GROUND FLOOR BEFORE AND AFTER ALTERATION

H. S. GOODHART-RENDEL, ARCHITECT.



STUDENTS' DRAWINGS (SERIES II.). XX.—ST. GEORGE'S HALL, LIVERPOOL: COMPOSITION OF DETAILS FROM BAY OF MAIN HALL.

MEASURED AND DRAWN BY E. N. FRANKLAND-BELL.

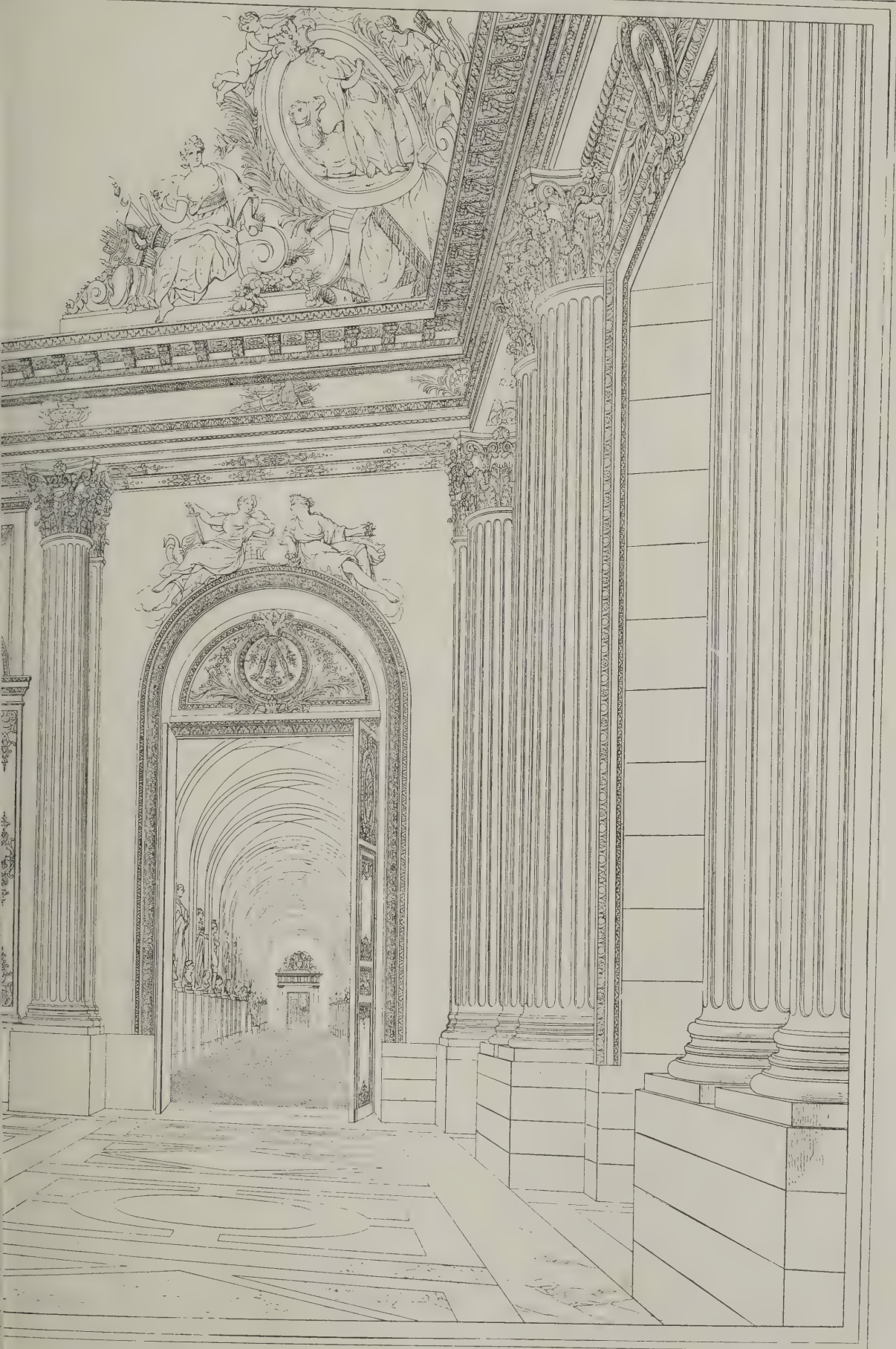


At St. Margat's, Middlesex.



At St. Albans.





E OF THE CHAPEL, VERSAILLES.
TECT.

the actual size of the main columns. As Mr. Ronald P. Jones says: "The general effect of the design itself is far more Roman than Greek, and in this respect contrasts with the restraint and severity of the exterior. Above the gallery level the walls are plastered and decorated in colour, even the capitals of the columns being modelled in plaster on a granite core and painted to represent bronze, since the Corporation had given up the idea of using real bronze, and had applied unsuccessfully to the Government for some old gun-metal. The frieze is imitation red granite, an unfortunate error in taste, for which Cockerell must be held responsible, and which raises momentary doubts as to the genuineness of the columns themselves. The pannels of the arches are filled in by allegorical winged figures in relief, and the ceiling is sub-divided into panels and coffers, some of which are pierced as air outlets in the scheme of ventilation." The drawing which we reproduce is by Mr. E. N. Frankland-Bell, a former student of the Liverpool School of Architecture who is now serving as a lieutenant in the Army.

Late Georgian Houses at St. Margaret's and St. Albans.

These are characteristic little houses of the period, both very late. The example at St. Margaret's is one of a group, all very similar in treatment, consisting of a central pedimented block, with trellis porch, and low wings on either side. The house at St. Albans is in the Cross Keys Estate; it was built as one of a series about 1830 from designs by George Smith, the architect of the Town Hall at St. Albans.

Two Chimney-pieces.

These two chimney-pieces, by Mr. H. Bulkeley Creswell, F.R.I.B.A., do not call for description. They are of wood, painted white.

Vestibule of the Chapel, Versailles.

The marvellous rendering of detail in the plates of Versailles which we have published recently is self-evident; nothing, indeed, could be finer. The plate of the vestibule to the chapel is a further example, interesting alike for the quality of its line as for the splendid spaciousness of the design itself. The chapel was built from 1699 to 1710 by Mansart and his successor, Robert de Cotte, and the vestibule is of the same period: it was through this vestibule that Louis XIV. approached his tribune in the chapel.

CORRESPONDENCE.

Trade-Union Pedantry.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—I was glad to be reminded, in your issue of April 12, of Mr. W. R. Greg's famous essays. Mr. Greg undoubtedly served his generation well, and was, indeed, one of the most sagacious publicists of his time. Your note has led me to search among his essays for the revelations as to trade union malpractices to which you allude. I find them in Appendix B to "Rocks Ahead." Under the heading "Unionist Restrictions on Labour," he quotes from a book by Mr. Thornton a number of instances that would be screamingly comic but for the degradation of character they reveal.

Demarcation disputes—which, it is gratifying to learn through your columns are in future to come before the Conciliation Boards—are represented, for example: Bricklayers and masons were at work on the restoration of an old church at Kenilworth. Some stonework joints had to be raked out and pointed. In that part of the country the masons had experience of such work, which the bricklayers are well qualified to do. Two bricklayers

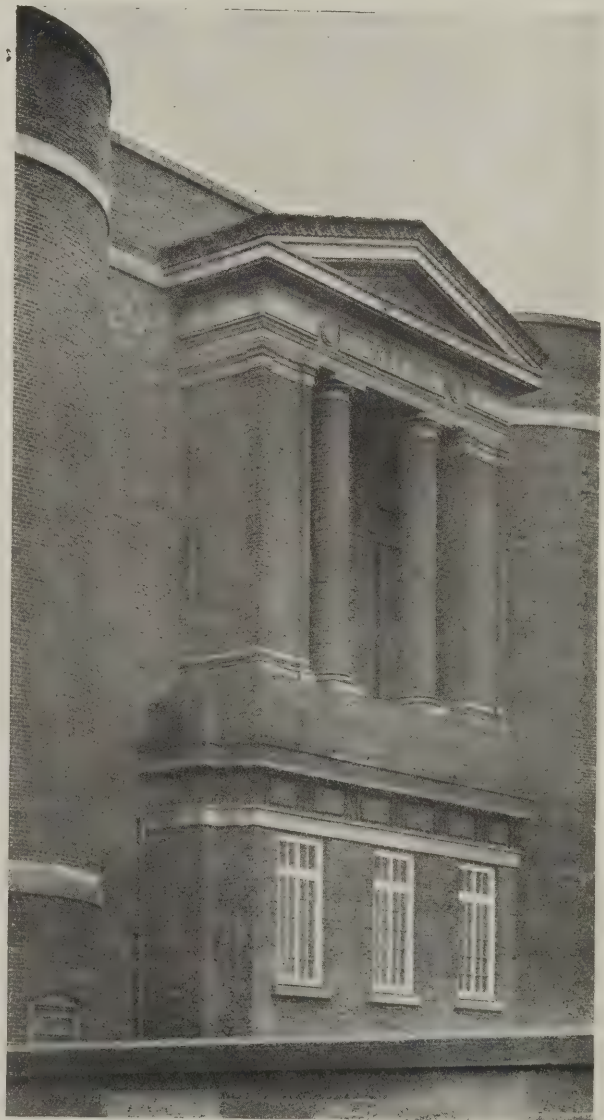
being put on to the work, the masons all struck, although, on being questioned, they admitted that not one of them was qualified to do the work. A similar strike of masons occurred at Sheffield, because some bricklayers had been set to tuck-point a stone wall; the masons admitting that they could not do the work, and impudently adding that they would not if they could, because they would have to buy special tools for it.

Painters were equally arbitrary. A book-keeper to a firm of house-painters, finding the marks on his measuring-rod nearly obliterated, touched them up with paint. A protest was lodged by the local painters' union, who requested that the book-keeper should not be allowed to do painters' work.

A bricklayers' local union had a rule providing that "any man found running or working beyond a regular speed shall be fined 2s. 6d. for the first offence, 5s. for the second, 10s. for the third, and if still persisting shall be dealt with as the committee think proper." In which contingency Heaven help him, if that rule conveyed a just impression of the committee's notions of proper thinking.

All this is ancient history; but I am afraid that the ancient rule of unreason is not dead; and what you have aptly termed the "pedantry" of trade-unionism must give place to a more rational tone if trade unions are to retain their influence.

B. V. D.



GILMORE HALL, STUDENTS' UNION, LIVERPOOL.
 PROF. C. H. REILLY, M.A., F.R.I.B.A., ARCHITECT.

INSTITUTE OF BUILDERS.

The thirty-second annual general meeting of the Institute of Builders was held at Koh-i-Noor House, Kingsway, W.C., on March 29. The audited accounts for the year ending December 31, 1915, and the annual report were read and adopted, the latter being enlarged upon by the President (Mr. Edward J. Strange).

The following elections were made: President: Mr. Leonard Horner (London). Vice-President: Mr. Samuel Smethurst, J.P. (Oldham). Treasurer: Sir Herbert H. Bartlett, Bart. (London). Hon. Auditor: Mr. A. W. Sinclair, J.P. (Scarborough). Executive Council: Capt. R. J. Holliday (London, re-elected), Capt. F. M. May (London, re-elected), Mr. R. B. Chessum (London, re-elected), and Mr. Samuel Salter (Southsea, elected).

The Executive Council for 1916-17 consists of:—President: Mr. Leonard Horner (London). Vice-Presidents: Mr. G. Bird Godson (London), Mr. Walter Lawrence (London), Mr. Edmond J. Hill (London), and Mr. Samuel Smethurst, J.P. (Oldham). Past Presidents: Mr. Fank May, J.P. (London), Mr. Thomas F. Rider (London), Sir Herbert H. Bartlett, Bart. (London), Mr. F. J. Dove (London), Sir John M. Burt, J.P. (London), Colonel G. H. Trollope (London), Mr. William Shepherd (London), Mr. Henry Holloway, J.P. (London), Mr. William F. King (London), Mr. Benjamin I. Greenwood (London), Mr. F. L. Dove, L.C.C. (London), Mr. James Carmichael, J.P. (London), Mr. William F. Wallis, J.P. (Maidstone), Mr. F. Higgs (London), Mr. James S. Holliday (London), Mr. H. Arthur Bartlett (London), Mr. Ernest J. Brown (London), Mr. F. G. Rice (London), and Mr. Edward J. Strange (Tunbridge Wells). Ordinary Members of the Council: Mr. R. B. Chessum (London), Mr. A. B. Falkner (London), Mr. F. J. Gayer (London), Capt. R. J. Holliday (London), Capt. F. M. May (London), Mr. G. H. Parker (London), Mr. W. J. Renshaw (London), Mr. S. Salter (Southsea), Mr. H. P. Shepherd (London), Mr. F. Shingleton, M.V.O. (London), Mr. W. Thomas (Cardiff), and Mr. A. W. Turnbull (London).

Points from the Report.

From the thirty-second annual report the following extracts are reproduced:

The building industry is passing through a critical period in consequence of the European war. Operations of a purely building character are being carried out under difficult conditions and, in many instances, have been suspended. A very large number of operatives usually engaged in the trade have either obtained employment on war work or have joined His Majesty's forces. The wages paid for war work have been much in excess of those paid in normal times and have exerted a marked influence upon other callings. The difficulty of obtaining skilled and unskilled labour is increasing. To this may be added the embargo which is to be placed on the importation of certain kinds of building materials. Builders realise the continued necessity for supporting the Government in every possible way and that it must be assisted and not hindered in its efforts to meet so unprecedented a situation, however much general occupations may suffer.

We hail with national pride the action of our fellow-countrymen, including many of our members and their sons, who have placed their services at the disposal of the

King and country; all have won renown, several have been honoured with war distinctions, and some have made the supreme sacrifice.

Apprentices.

• Fully realising the necessities of the building trade to make provision for its future welfare, the Council has given its earnest attention to the question of apprentices. Wherever valuable co-operation could be obtained, strenuous efforts have been made to secure it. Schemes have been formulated and copies forwarded to various governing bodies. At present the difficulties to contend against are very great, as mere boys are now able to earn in temporary occupations more than they are likely to earn as adults in ordinary employment. Much consideration and care is being given to the evils that will inevitably arise from the present "dead-end" employment, in order to provide for a period when vast numbers of skilled and unskilled workmen will be needed for separate trades. To meet such an emergency the council has endeavoured to prosecute its scheme to induce boys to become apprentices and to encourage parents not to take the immediate advantage of placing their sons in occupations and in trades in which there is no profitable future.

The present is not, perhaps, the precise time to introduce reforms, but it certainly is a time to prepare for the future and sow the seeds of a coming harvest. It therefore behoves all who are interested in the ultimate success of trade ventures to get things in readiness for future practical application.

At the request of the Board of Trade Advisory Committee for Juvenile Employment a deputation waited upon that Committee and discussed the Institute of Builders' Apprenticeship Scheme, special emphasis being laid upon the necessity of technical school instruction and practical workshop experience being available for the craftsmen of the future.

To further the interests of apprenticeship it has been decided to present annually a silver and a bronze medal to the most successful students of the City and Guilds of London Institute in our Overseas Dominions, Colonies and Dependencies, in addition to the medals and money prizes now given to students in the United Kingdom. It has also been decided to award a silver medal each year—as a special prize for general efficiency in the theory and practice of building—to one of the students attending the Brixton L.C.C. Junior Day Schools who shall be recommended by the Brixton School of Building.

Form of Contract.

Some time has passed since this Institute approached the R.I.B.A. with a view to the formulation of an agreed form of contract more in consonance with modern requirements than the form now in vogue and to which even the R.I.B.A. itself has suggested certain amendments.

At the request of the Practice Committee of the R.I.B.A., the president and secretary, together with the president and secretary of the National Federation of Building Trades Employers, attended a conference upon the subject. It transpired that the R.I.B.A. has formulated a revised form of contract, the "draft" of which it has promised to forward, when ready, to the Institute for consideration. Some months have elapsed since this undertaking was given, but it has not yet been received. Efforts have been made by the Council to suspend any opposition that might be offered rather than take any action which might hamper

the production of a revised form. Great patience has been shown, but in some parts of the country active steps have been taken to formulate, in conjunction with local governing bodies and architects, local forms for local use. Any step taken in providing an alternative form of contract is to be deeply regretted, in view of the fact that the agreed form has been and continues to be increasingly used, and it is to be hoped that when the revised document is submitted it will become mutually acceptable.

Sub-Contract.

A special committee has been appointed and is thoroughly taking up this matter in co-operation with the National Federation of Building Trades Employers, in conference with the London Master Builders' Association and representatives of sub-contractors' organisations with the hope of producing a form that will be agreeable to all parties concerned. The different conditions under which sub-contractors in London and those in the provinces work is fully appreciated and it has been suggested that two forms should be drawn up—one for sub-contractors to be appointed under clause 19 of the agreed form of contract and one for specialists and others under clause 2. This action has been made necessary because the R.I.B.A. has declined to produce, authorise, or agree to any form of sub-contract.

Mr. W. H. Hope (solicitor, Sunderland) has been appointed legal adviser to the joint committee, and it is hoped that the committee will very shortly be able to forward the result of its deliberations.

Rise in Cost of Building Materials.

The rise in prices of building materials has been very marked since the commencement of the war, and it is anticipated further increase through the limitation to be placed on imports. From all over the country complaints of this have been received, but very little can be done to ameliorate the case under the circumstances.

The rise seriously affects some contracts entered into before the war to which easement has been obtained from architects and building owners. This is to be deeply regretted, as it involves contractors in serious loss.

Insurance against Risks from the King's Enemies.

Every attention has been given by the Council to the question of responsibility as to insurance against risks from the King's enemies in connection with war contracts. Some building owners, after considerable correspondence, have agreed to bear the whole cost of the insurance premium. H.M. Office of Works have agreed to bear one-half the cost.

Timber Specification.

The R.I.B.A. forwarded a timber specification with the request for the Council's criticism. A committee was appointed who, in conference with representatives of the Timber Trades Federation, jointly amended its provisions and submitted them to the R.I.B.A. The R.I.B.A. writes to say that its committee submitted its report to the Council, which decided to take no further action, "as it is of opinion that in consequence of conditions arising out of the war, the present time is not opportune for making regulations which, in probability, could not now be carried into effect. It is proposed to resume consideration of the matter at the termination of the war."

LONDON COUNTY COUNCIL AND OVERLAPPING SERVICES.

In July, 1915, the London County Council appointed a Special Committee on War Estimates "to consider and advise the Council fully as to the lines on which the maintenance estimates for 1916-17 shall be prepared," etc.; and in their main report, submitted in November of the same year, the committee stated that their attention had been drawn to a number of instances in which there seemed to be duplication of work, overlapping, or lack of co-ordination, either between the various departments of the Council or between the Council and outside bodies, and that further enquiry and report seemed desirable. A further report has now been presented, and from it we extract the following observations on the inspection of means of escape from fire, on the inspection of theatres, etc., and on county bridges, tunnels, and embankments.

Means of Escape from Fire: Inspection.

Ordinarily the architect reports to the Building Acts Committee upon matters connected with the provision of means of escape from fire, but inspectors in the public control department perform certain inspection duties in cases in which there are living-rooms or workshops or work-rooms over or communicating with a building used for the storage of petroleum (London Building Acts (Amendment) Act, 1905, Section 11), a proportion of their salaries being chargeable to the accounts in respect of work performed under the direction of the Building Acts Committee. It appeared that this might possibly involve a certain amount of overlapping in respect of inspections and reports both by the architect and the inspectors in question, and the Building Acts Committee were asked whether steps were taken to prevent such overlapping.

In reply, the Building Acts Committee state that all premises coming within the purview of the section mentioned, relating to the storage of inflammable liquids, are brought out by the petroleum inspectors of the Public Control Department, who, in the course of their duties, have become aware of the majority of such premises. These inspectors are instructed to advise occupiers how arrangements may be made to avoid the operation of the section by storing the inflammable liquids in a safe place outside the building, e.g., in the yard. In the majority of cases this is done, and such cases are reported by the chief officer of the Public Control Department to the Building Acts Committee as being exempt from the provisions of the section. In these cases the architect takes no action. In cases in which occupiers cannot or will not make arrangements to exempt the premises the chief officer reports the cases to the committee or reference to the architect, who then takes steps to secure compliance with the requirements of the section. When the chief officer is advised by the architect that works to comply with the section have been carried out, the petroleum inspector is instructed to pay an occasional visit to see that no alterations are effected in the storage of the liquids which would make it necessary to reconsider the case. The Building Acts Committee state that there is thus no overlapping of work between the two departments in the administration of this section.

Inspection of Theatres, etc.

The chief officer of the fire brigade inspects theatres, music-halls, etc., and

storage arrangements for cinematograph films in picture palaces, music-halls, etc., from the point of view of safety from fire. The architect advises as to construction and means of escape in connection with theatres, music halls, etc., and inspects all theatres and music halls once a year with a view to detecting unauthorised alterations and dilapidations. The medical officer reports as to sanitation and ventilation in theatres, music halls, etc., and inspects the sanitary and ventilation arrangements once a year. These arrangements appeared to involve unnecessary duplication of inspection, and the suggestion was therefore made to the Theatres and Music Halls Committee that the yearly inspection by the architect should be dispensed with, the onus being laid upon the licensee of stating, when he applies for the renewal of his licence, whether any, and if so what, unauthorised structural alterations have been carried out during the past year. It was also suggested that the chief officer of the fire brigade should supply the architect with any necessary information from time to time in this connection. Further enquiry was made whether it was essential that the medical officer should advise on and inspect yearly the ventilation and sanitation arrangements.

In reply, the Theatres and Music Halls Committee state that they have decided (i.) that the annual inspections made by the medical officer and the architect shall be discontinued; (ii.) that the other work in connection with the sanitation and ventilation arrangements in theatres, etc., at present performed by the medical officer, shall be done by the architect, the medical officer being called in only in cases of exceptional difficulty; and (iii.) that the chief officer of the fire brigade shall have regard in his inspections to the matters which at present form the subject of the annual inspections by the medical officer and the architect. The General Purposes Committee, who deal with the duties of chief officers, have informed the Theatres and Music Halls Committee that they have no observations to offer upon the new arrangements.

County Bridges, Tunnels, and Embankments.

The Council is the authority for the maintenance of county and minor bridges, the roadways and footways of the Victoria Embankment, the footways of the Albert and Chelsea Embankments, and the embankment walls and railings along Grosvenor Road. It is also the authority for maintenance of the Thames tunnels. "Maintenance" includes both repair and cleansing.

The Council has power to require the metropolitan borough councils to undertake, for an annual payment, the maintenance of all roadways, footways, and bridges vested in the Council. It did not appear that any alteration should be made in the existing arrangements, under which the repair, which is frequently closely associated with questions of structure, of bridges, tunnels, etc., remains in the hands of the Council, but the question of cleansing such structures and of cleansing and repairing roadways and footways depends on different considerations.

The cleansing of Hammersmith, Putney, and Wandsworth Bridges is carried out by the local authorities concerned at a fixed charge a year, and arrangements have recently been made for the cleansing of Battersea, Albert, and Chelsea Bridges to be done by the Battersea Metropolitan Borough Council. The cleansing of Vauxhall, Lambeth, Westminster, and

Waterloo Bridges, however, is in the Council's hands, and the chief engineer expressed the opinion that, so long as the Victoria Embankment continued to be maintained by the Council's staff, there would be no economy in transferring the cleansing of the roadway of these bridges to the local authorities. He further pointed out that, when the question of the transfer of all cleansing work at the Victoria Embankment to the Westminster City Council was considered in 1910, it was found that the transfer of the Council's men was a serious difficulty, the two authorities having different pension schemes; and that there were, at the date of his report, eight men in the Council's superannuation scheme. Moreover, he stated that the Council had made with contractors long-period agreements for the repair of the embankment and that it would for this reason be inconvenient to place in other hands the cleansing of the roadway. The general conclusion of the chief engineer was that there was not likely to be any great economy effected by transferring the cleansing work to the Westminster City Council.

It did not appear, from the information received, that the transfer to the local authorities of the cleansing of the four bridges mentioned above (Vauxhall, Lambeth, Westminster, and Waterloo) and the Victoria Embankment would not result in economy, and the Highways Committee were asked to look closely into the matter and to furnish their observations thereon. They were informed that, if it should transpire that economy would be effected by the transfer of the cleansing work, the difficulties referred to by the chief engineer were not apparently of such importance as to stand in the way.

The chief engineer also expressed the opinion that the transfer to the local authorities of the cleansing of the tunnels would not result in economy. In this case also the Highways Committee were asked for their views. In reply, the Highways Committee state that they have been in communication with the Westminster City Council with a view to ascertaining whether that authority would undertake the cleansing of the Victoria Embankment and Lambeth, Vauxhall, Waterloo, and Westminster Bridges. The Works Committee reported to the City Council adversely to the proposal, but the matter was referred back. In the meantime, as the contract to which the report referred expired on March 31, 1916, it had become necessary to invite tenders for the execution of the work.

With regard to the cleansing of the tunnels, the Highways Committee state that there are only footway passages through Greenwich and Woolwich tunnels, and that the cleansing work there is insignificant. They have been in communication with the Greenwich and Stepney Metropolitan Borough Councils regarding the cleansing of the roadways through Blackwall and Rotherhithe Tunnels respectively, but these authorities have declined to undertake the work.

After-War Building.

Lecturing at the Surveyors' Institution, Mr. W. R. Davidge said that at the end of the war there would arise a need for the planning of village communities in all directions for sailors and soldiers. In the interest of traffic facilities and public health and economy the height of buildings should be kept within reasonable limits. In country districts wooden buildings might be permitted.

NEWS ITEMS.

Steel in the States.

In a brief review, in the "Pall Mall Gazette," of the present industrial position in the United States, it is noted that in the steel trade there are as yet no signs of reaction, unless it be that prices have risen to a point which obliges in many cases a postponement of orders. The steel industry is very active, the output of pig iron having practically doubled in a little over a year. America is now making iron at the rate of nearly 40,000,000 tons a year.

Memorial to the late Lord Londonderry.

The memorial to the late Marquis of Londonderry, subscribed for by the parishioners of Seaham Harbour, was unveiled on April 15, in St. John's Church, by the Earl of Durham, Lord Lieutenant of the County. The memorial is a tablet of white Carrara marble, with a richly carved foliated border inlaid with Sienna marble. It is surrounded by a moulded frame of polished Irish green marble, and surmounted by the coat-of-arms of the late peer emblazoned in heraldic colours. It has been executed from the design of Mr. W. H. Wood, F.R.I.B.A., of Newcastle and Durham, by Messrs. Gaffin, of Regent Street, London.

Women and Housing.

The South Wales Garden Cities and Town-Planning Association have drafted a scheme for enlisting the practical interest of women in the elucidation of housing problems. The first meeting of the Women's Advisory Committee has been held at the City Hall, Cardiff, Mr. Lleufer Thomas, chairman of the association, presiding, when the initial steps were decided upon. The association, it was explained by the chairman and secretary (Mr. Edgar L. Chappell) proposes to institute an exhaustive inquiry into the planning and construction of dwellings and their fittings. The meeting was largely attended by women, who raised an animated discussion and gave the association some valuable suggestions.

A Master Decorators' Association for Croydon.

A meeting of decorators in Croydon and district was held in the Public Hall, Croydon, for the purpose of forming a master decorators' association for Croydon and district. Mr. J. Anderson, a past president of the London Association, presided. The meeting was the outcome of efforts to organise the trade in Greater London, where there is a serious shortage of qualified mechanics. Interesting particulars were given of the classes for the scientific training of boys which are taking the place of the old apprenticeship system, and Mr. J. E. Butterworth explained how firms were forming a panel to give one day a week to carrying on the businesses of those of military age who might be called upon to join the forces. By this means his firm, which had existed for three generations, would still go on. It was decided to form an association for Croydon and district, and Mr. T. Costar was appointed secretary pro tem.

War Effect on Contracts.

The contractors for the work in connection with the Snowdon Road Flood Prevention Scheme, Middlesbrough, have, it is stated in the "Yorkshire Herald," written to the Middlesbrough Sanitary Committee intimating that they have so far lost £1,200 on their contract owing to

the shortage of labour and materials, most of their best men having gone to the front. Under the circumstances they asked the committee to exclude from the contract 93 yd. of sewer, but this the committee declined to do. They offer, however, an extra grant of £3 per yard, provided the work is completed at the rate of 30 yd. per month.

A Concrete Brine Reservoir.

Waterproofed concrete is now used to construct receptacles for many kinds of liquids. We have been informed that a concrete reservoir containing brine was built two years ago at Droitwich. A recent report states that it is still quite leakproof. The powder Pudlo was used to waterproof the cement.

THE "FIREPROOFING" OF MEDIÆVAL CHURCHES.

What is it (asks a reviewer of Mr. Clarence Ward's book on "Mediæval Vaulting," in "The Times Literary Supplement") that architects were trying to do from the eleventh to the sixteenth century, and what is it that they have ceased to worry about from the fourteenth century in Italy and the sixteenth century in England? It is simply that for the first of these periods the authorities insisted on having their churches, at any rate the big churches, fireproof, and in the later period as a rule they did not. That is the one differential *motif* of the two styles. And as there were diverse methods of fireproofing, so there grew up diverse architectural schools.

One school, reviving the traditions of the dome-builders of Rome, covered the whole church with domes of masonry, after the fashion of St. Front, Perigueux, or that of the cathedral of Le Puy, and its faraway rival, built, as Professor Ward does not seem to be aware, by monks from Auvergne, of evident inspiration from Le Puy. Another, and far more popular, method was to surmount the whole nave or transept or choir with a tunnel of masonry, usually without triforium or clerestory; sometimes with triforium but without clerestory, as in Auvergne and Toulouse; seldom, as in Burgundy, with both, as in the single surviving fragment of the vast abbey church of Cluny. In a third school, like the first two inspired by surviving monuments of Imperial Rome, the fireproof ceiling took the form of the cross-vault or groined vault, as over the nave of the great abbey church of Vézelay, unfortunately styled by Walter Pater a wagon or tunnel vault; examples of this third type are very rare except low down and over narrow spaces, such as crypts and aisles.

But the third type turned out to be by far the most important of the three, for by the addition of cross-ribs the Gothic type of skeleton church could be and was developed. This development of the rib takes up most of the story of Gothic architecture. Ridge ribs were added lengthwise and crosswise, as in the high vaults of Westminster choir and nave; little ornamental ribs were stuck in as well; finally the whole vault, complicated to a marvellous degree, in such vaults as those of St. George's, Windsor, was redesigned in the unique English achievement of the fan vault. Then came the Renaissance Gallios, who refused to be worried with the complications attendant on a fireproof ceiling, and abandoned Gothic vault construction altogether, except for a time in that home of lost causes—Oxford.

OBITUARY.

Mr. Leslie Ower, F.R.I.B.A.

The death has occurred of Mr. Leslie Ower, F.R.I.B.A., formerly senior partner in the firm of Messrs. Leslie Ower and Allan, architects and civil engineers, Whitehall Street, Dundee. Mr. Ower, who had just retired from active business life, had latterly been failing health. According to "Who Who in Architecture," Mr. Ower was born in 1851, educated at Dundee High School and the Andersonian University, Glasgow, articled to his father, Mr. Charles Ower, and commenced practice in 1874, in Dundee. His father was for many years Harbour Engineer, and his ability and initiative Dundee owed much of the prosperity that came with the development of the city's harbour and dock facilities. Mr. Leslie Ower specialised in the designing of villas, designed the offices of the "Dundee Advertiser," built several other business premises, and some churches, and did a great deal of estate planning. In his capacity as civil engineer he supervised the arrangements for the Newburgh water supply.

Mr. George Spencer.

Mr. George Spencer, architect, who has lived in retirement for many years in Taunton, has died in his eighty-seventh year. He had long been identified with religious and philanthropic work, having for thirty-five years acted as hon. secretary of the Taunton Town Mission.

HOMES FOR DISABLED FIGHTERS

At the invitation of the Lord Mayor, Colonel Sir Charles Wakefield, a large gathering assembled at the Mansion House on April 6 for the purpose of supporting the War Seal Foundation.

The Lord Mayor said that the object of the War Seal Foundation was to erect dwellings wherein disabled men could live with their families, on their pension without any recourse to charity. It was hoped that a compact flat might be let at a rental of 6s. 6d. per week, which would include medical attendance and baths of all kinds. To begin with, a block of flats which would cost £20,000, and for which Mr. Oswald Stoll had generously given the site, was to be erected, and these were to be multiplied all over the country, funds permitted. Any donor of £4 might contribute a flat, to which he might give either his own name or any other which he might suggest.

Mr. Oswald Stoll said that the foundation had raised £20,000 by the sale of war seals, which were small pieces of paper intended for the fastening of letters more securely. The flats in the Fulham Road were of a special kind and would house forty-eight families. They cost £20,000 to build. Each flat contained two bedrooms, a living room, scullery, kitchen, and bathroom. There was a corner for the invalid's chair, also special heat baths, a residents' entertainment room, and the nursing superintendent's quarters. The weekly rents, which would include rates, would be 6s. 6d. Homes like these were required by the scores in colonies of bungalows. As showing the need for these places, he might refer to the fact that 23,500 men were pensioned off in 1915.

The economical planning of such flats, which rather unusual conditions must meet, is no doubt receiving the earnest attention of architects.

BRADFORD CITY IMPROVEMENT SCHEME.

At a recent meeting of Bradford City Council, the minutes of the Street Improvement and Buildings Committee, submitted by Alderman F. Foster (chairman), contained a resolution accepting the offer of the Bradford Central Estates Co., Ltd., to sell to the Corporation four strips of land at Westgate, Rawson Road, Northgate, and John Street respectively, for the total sum of £5,000, the Corporation to pay £50 for surveyors' costs and £35 for all solicitors' charges, and to pay £5 per cent. upon the purchase money for any land dedicated from the date of such dedication; the purchase to be completed within twelve months after the declaration of peace in the present war; the transactions to be subject to certain terms and conditions now agreed.

Alderman Foster explained that the Central Estates Co. owned, he believed, between 16,000 and 17,000 square yards of land abutting on Westgate, John Street, Rawson Road, and Northgate. They bought it some time ago, and gave £64,000 for the whole area, the price working out at £4 2s. per yard. Representatives of the company attended before the committee and submitted plans showing how the estate was to be laid out. The square which the area constituted was to be laid out in shops—expensive buildings according to the elevations—at an estimated cost of between £50,000 and £60,000. At the present time the area was bringing in next to nothing in rates. The Corporation required certain strips of land at Westgate, John Street, and Northgate, and the representatives of the Central Estates Co. urged that as the land had cost them £4 2s. per yard the Corporation should pay a higher figure than that, being that they were taking the front positions. However, after discussion, it was agreed that the Corporation should purchase what they required at £4 per yard—a smaller price than that paid by the company for the whole area. In addition he (the speaker) had caused to be inserted in the agreement a proviso that the work were not finished according to the plans within ten years the company should forfeit £2,000. This proviso would not operate if the bank rate was tremendously high—over 6 per cent.—because people could not be expected to carry forward such a scheme if the bank rate were at 8 or 9 per cent. But that was most unlikely contingency. The Street Improvement Committee adopted the proposals unanimously, feeling that they had made a fairly reasonable bargain. Besides beautifying the city the scheme, when completed, would probably result in the Corporation receiving from £1,000 to £2,000 more in rates from the area than they received at the present time. The committee, when plans were submitted to them, could not adopt a dog-in-the-manger policy. They must either arrange at once to buy the land they required or allow the building to proceed and make their purchase later, when the price would be higher.

The minutes were adopted.

The full terms of the arrangement under which the City Council adopted the proposals of the Street Improvement Committee for the purchase of land from the Bradford Central Estates Co., Ltd., are as follows:

That the offer of the Bradford Central Estates Co., Ltd., and their mortgagees to sell to the Corporation 88 square yards of

land in Westgate, 990 square yards of land in Wilson Road, 168 square yards of land in Northgate, and 14 5-6 square yards of land in John Street, making a total area of 1,260 5-6 square yards of land, for the sum of £5,000 be accepted subject to the following conditions, namely:

The Corporation to pay £50 for surveyors' fees as soon as the agreement is completed and £35 for all the solicitors' costs of and incident to agreement, abstract of title, and conveyance. The Corporation to complete the conveyance within twelve months after the declaration of peace of the present war, but in case the owners pull down any portion of the buildings and dedicate the lands required for the above-mentioned street widenings then the Corporation are to pay after the rate of £5 per cent. per annum upon 60 per cent. of so much of the purchase money as relates to the said land so dedicated as and from the date of such dedication as certified by the city engineer. The owners to remove all existing cranes from over Rawson Road to the back of the properties. The owners to undertake to submit plans showing the proposed buildings to be erected on the said lands, similar to plans and elevations submitted on February 23, 1916, and again on April 5, 1916, and the elevation thereof to be subject to the approval of the Corporation, and within five years from the date of the conveyance to proceed with the erection of such buildings and thereafter to complete the same with all reasonable despatch, the sum of £2,000 out of the £5,000 to be retained as a bond for the due execution of the contract and to be forfeited if the scheme is not completed within ten years from the date of the conveyance, provided that the bank rate does not exceed £6 per cent. during the last-mentioned term of ten years, and in the latter event the period of ten years shall be extended during such time as the bank rate exceeds £6 per cent. The above £2,000 to bear interest at the rate of £5 per cent. per annum until the completion of the scheme or forfeiture as the case may be; and that the common seal be affixed to an agreement made between the above-named parties carrying out the terms of this resolution.

THE HOUSING CONGRESS.

Four hundred representatives of local authorities in Great Britain, and of societies interested in housing, met last week at Caxton Hall, Westminster, to discuss "Home Problems After the War." The Congress (convened by the National Housing and Town Planning Council) has a wider basis than any gathering of the kind held in the past, for representatives have been sent by local authorities, miners and cotton operatives, master builders and operative builders, architects, estate agents, etc., and property owners.

Mr. Harold Shawcross, chairman of the National Housing and Town Planning Council, who presided at the opening session, explained that two of the main objects of the Congress are to prevent unemployment and to ensure that the nation is prepared to cope with the enormous demand for more working-class cottages that must accompany and follow the demobilisation of the Army when peace is declared. It was true, he said, that by slow demobilisation the danger of flooding the labour market with labour could be avoided, but the cost of such a policy would be very great. What the Housing Council therefore urged was the preparation in

advance of building schemes involving the performance of work of real use to the community.

Mr. B. S. Rowntree and Mr. S. Smet-hurst (past-president National Federation of Building Trades Employers) both spoke of the urgent duty of taking some such steps to prevent widespread unemployment at the close of the war.

In the course of the discussion which followed it became evident that the congress was sharply divided between the municipalists and the anti-municipalists, the cause of the latter being championed by Mr. Cheverton-Brown, president of the National Federation of Property Owners.

Private enterprise, according to several speakers, has utterly failed to meet the demand for working class homes. "That is because private enterprise has been hampered by legislation," was the retort of the opposition.

The following resolution was carried: "That this congress is of opinion that the legislation promised by His Majesty's Government in 1913 and again in 1914 with regard to the Finance Act of 1909 should be now carried out in order that an admitted obstacle to the building of working-class houses may be removed and the provision of such houses stimulated at the close of the war."

A resolution urging the necessity of simplifying and cheapening the transfer of land so as to encourage the building of houses for the working classes was also approved.

SOCIETIES AND INSTITUTIONS.

Edinburgh Architectural Association.

Edinburgh Architectural Association paid its first visit of the season to St. Mary's (Episcopal) Cathedral in the city. The building was raised from funds bequeathed by the Misses Walker, of Coates and Drumsheugh, in 1870. The buildings were commenced in 1874, and completed in 1879, when the Cathedral was consecrated on October 30, 1879. The architect was the late Sir Gilbert Scott, and the design is founded on the Early Pointed style. The western towers are now being built, the south-west tower being completed, and the north-west tower is in progress. The chapter-house contains the library bequeathed by the late Bishop Dowden. The central tower contains a fine peal of ten bells, and the bellringers' chamber is one of the best appointed in Britain.

Bristol Society of Architects.

The annual general meeting of the Bristol Society of Architects was held at Fortt's, 6, Royal Promenade, Clifton. After tea the chair was taken by the president, Mr. Graham C. Awdry, F.R.I.B.A. The council's annual report and the hon. treasurer's balance-sheet were duly read and adopted. The election of council and officers for the year 1916-17 resulted in the following gentlemen being declared elected: President, Sir F. W. Wills, F.R.I.B.A.; vice-presidents, Messrs. G. C. Awdry, F.R.I.B.A., and G. H. Oatley, F.R.I.B.A.; members of council, Messrs. Mowbray A. Green, F.R.I.B.A., C. F. W. Denning, F.R.I.B.A., G. C. Lawrence, A.R.I.B.A., W. S. Skinner, F.R.I.B.A., J. Foster Wood, F.R.I.B.A., and R. C. James, F.R.I.B.A.; associate members of council, Messrs. E. G. Rodway, A.R.I.B.A., and H. W. S. Wills; hon. secretary, Mr. A. B. Botterill, A.R.I.B.A. Mr. J. B. Wills, A.R.I.B.A., will continue to act as hon. treasurer.

PUBLISHER'S ANNOUNCEMENT.

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The Bethnal Green Board of Guardians invite TENDERS for EXECUTING PAINTING AND REPAIRING WORK at, **BETHNAL GREEN MILITARY HOSPITAL, CAMBRIDGE ROAD, N.E.** Specifications may be obtained from the undersigned by forwarding stamped addressed foolscap envelope. Tenders must be returned to reach him not later than first post on Tuesday, the 25th April.—By Order.

D. THOMAS.

Clerk to the Board.

Administrative Offices,
Bishop's Road, Bethnal Green, N.E.
April 5, 1916.

METROPOLITAN BOROUGH OF LAMBETH.

TENDERS FOR THE SUPPLY OF BROKEN GRANITE.

The Lambeth Borough Council invites Tenders for the supply, in quantities not exceeding 1,000 cub yards, of 2 in. Broken Granite: (a) to various roads and depots; or (b) to railway goods yard within the Borough. Persons tendering are required to give a concise description of the granite tendered for, and to state: (1) the quantity offered; (2) the date of first delivery; and (3) the period required for the delivery of the total quantity. Accompanying the Tender must be sent a sample of the Granite proposed to be supplied and the material in bulk to be supplied by the accepted Tender will be required to be equal in all respects to such sample.

Sealed Tenders, endorsed "Tenders for Granite" to be addressed to the Council of the Borough of Lambeth, and to be delivered at the Town Hall not later than 10 a.m. on Wednesday, the 26th day of April, 1916.

BRUCE PENNY, Town Clerk.

Lambeth Town Hall,
Brixton Hill, S.W.

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THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, April 26, 1916.

Volume XLIII. No 1112.



CHRIST'S HOSPITAL, ABINGDON.

THE ARCHITECTS' & BUILDERS' JOURNAL.

APRIL 26, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1112.

EDITORIAL.

SHARP contention marked the congress of the National Housing and Town-planning Council.

That the housing question has become acute, all were agreed, but the congress divided into opposition parties on the vital matter of finance, one party contending that municipalities should build, and the other that private builders should be subsidised. In the upshot, a resolution was passed urging the Government to set aside not less than twenty million pounds for advances to local authorities and other agencies to enable them to provide houses at reasonable rents. Possibly both parties are satisfied with this compromise, the expression "and other agencies" clearly leaving the door ajar for the private builder; who, however, as well as the municipalists, will not have forgotten the wise saying, "First catch your hare." It will be soon enough to wrangle about the allocation of these millions when they come within reach. In the meantime, however, the preliminary skirmishing at the congress will have served several excellent purposes. It has revealed an almost passionate interest in a subject that is clearly recognised as being of immense national importance; it has brought out an antagonism that, in itself a healthy sign, makes for the further development of energy; and it should afford the Government the material for some rather useful deductions as to the force and trend of the movement. The mere fact that about four hundred delegates attended the congress is in itself a convincing proof of power and momentum, as well as an explanation of the strongly controversial character of some of the discussions.

With respect to the opposing camps, it was commonly recognised, before the war altered the conditions, that housing operations gave free scope to both public and private effort, the one system supplementing the other, and each having its own obvious limitations. On the one hand, it had been made manifest that municipalities could not build so economically as the private owner. On the other hand, the private owner would not—could not be expected to—meet any special demand for houses that, by reason of local conditions, would not yield a fair profit, and that is where public authorities had an obvious duty to fulfil. In present circumstances, it is almost impossible to build small houses except at a loss; and, as we know, simultaneously with the slump in this class of investment, there has been a strong attraction of capital in other directions, and the combination of adverse conditions has created a house-famine that is becoming daily more serious. There is only too much reason to fear that, immediately on the cessation of the war, the situation will immediately become immensely more grave. From the many

thousands of instances in which soldiers' brides are still living as they did when single—with parents, in single-room lodgings—there will arise a sudden and simultaneous demand of such magnitude as to make the present dearth—already serious enough—seem puny in the comparison: unless, indeed, the contingency is forestalled by action that even now cannot be safely delayed.

An obvious danger of the situation is that the market will be allowed to drift from bad to worse, with ultimate resort to desperate eleventh-hour remedies. Already there are afloat suggestions that are more or less grotesquely absurd. From this category it would not be altogether safe to exclude the relaxation of building by-laws; for it will be necessary to guard against a revulsion to an extreme of laxity that would be decidedly worse in its effects than its opposite of excessive rigour. But there is no doubt about the absolute folly of such expedients as the building of mud houses and timber sheds for human habitation. There is no need for such extravagance: for that, when it comes to, whether it be regarded as an exercise of the imagination or as a waste of money on temporary and trumpery substitutes for the desired permanent dwellings that must eventually supersede such paltry and contemptible makeshifts. When the country can no longer afford its workers any more dignified shelter than mud hovels and log huts, it will be time for the population to emigrate *en masse* to the backwoods.

Our concern is, of course, mainly with the question as it directly affects architecture and building. With regard to the political economy of the subject we can have little to do; it lies rather outside our province. In the same way, we cannot help seeing that all these fragmentary attempts to produce the cheapest possible dwellings, and all these proposals for State aid and local subsidies, do not go to the root of the matter. They are surely symptomatic of something radically wrong with the body politic. A social or industrial system that is driven to such shifts, with the implicit confession that labour is not sufficiently rewarded to enable it to pay a fair rent for respectable accommodation, would seem to be in need of thorough overhauling. Now that the industrial system is, in a way, under revision, it should be possible to copy the example of America, where wages run high, and the workers, aided by the most efficient machinery procurable, give the employer a much better yield on their labour bill than can be hoped for where appliances are primitive, organisation is slack, and the workers, living from hand to mouth, are in a chronic temper of sullen hopelessness. T

medieval land laws, made tenfold more oppressive ill-advised modern legislation, require drastic reform—a fact that was duly recognised in two of the resolutions passed at the congress, one calling for the revision of the Finance Act of 1909, and the other urging the necessity of simplifying and cheapening the transfer of land. But these being questions for specialists, we can do no more than point out that they are fundamental to any really satisfactory settlement of the housing problem. Housing conferences that take no cognisance of these vital considerations do but ally with the fringe of the subject.

This charge of superficiality cannot be justly levelled at the recent congress, at which Mr. H. Aldridge moved that the congress should urge all parties in the State to produce legislation: "(a) To set up machinery in all industries to require employers to pay wages sufficient to ensure decent housing accommodation for their workers, and (b) To secure that where such raising of wages can only be achieved by stages the local authority shall provide decent housing accommodation for the poorest, and that the country shall bear the difference in the cost between the rent of the decent dwelling and that which the tenants can afford to pay." That goes to the heart of the difficulty, whether or not it offers a practicable solution of the problem.

Less contentious and more practical was the discussion, in one of the too few purely architectural papers read at the congress, of "The possibility of adopting new and cheap building materials and securing economies in the design of cottages, provided that the essential standards of good building construction and of wholesome environment of dwellings are not impaired." Mr. H. L. Paterson, A.R.I.B.A., of Sheffield, was the author of that paper, of which he has just quoted so happily expresses the desiderata. He spoke with knowledge; for he won, in 1907 the gold medal for cottage design at the Sheffield and North Midland Cottage Exhibition, and in the following year was awarded the silver medal at the Wolverhampton Cottage Exhibition. Moreover, he has designed many cottages of the "Garden City" type which have been built at Sheffield, Letchworth, and elsewhere.

Mr. Robert Cochrane, I.S.O., F.R.I.B.A., F.R.I.A.I., I.S.A., whose death was recently recorded, and to whom so fine a tribute has been paid in a special resolution passed by the Institute of the Royal Architects of Ireland, of which for thirty-eight years he was a member, was born in 1846, and was descended, with pardonable pride he delighted to record, from an ancient Dano-Scottish family which settled in Ireland in the seventeenth century. Educated at Queen's College, Belfast, Mr. Cochrane was articled to Henry Smyth, County Surveyor of Down, and practised as architect and civil engineer in that county until 1874, when he joined the Architectural Department of the Board of Public Works in Ireland, retiring as principal architect and surveyor in 1909. At the time of his death he was H.M. Inspector of the Ancient and National Monuments of Ireland. He was the author of the reports on Irish ancient monuments published annually in the Board of Works Blue Books, as well as of several independent monographs of architectural interest, such as "Antiquities of the Western Islands of Scotland." He was president for two terms (1904-6) of the Institution of Civil Engineers of Ireland; president of the Royal Society of Antiquaries of Ireland in 1912, and vice-president of the Cambrian Archaeological Association. From 1883 to 1909 he was a member of the council of the Royal Irish Academy, and he was an hon. LL.D. of the Royal University of Ireland.

In reply to a letter from Mr. Ian MacAlister, secretary of the Royal Institute of British Architects, urging the importance of reserving arterial roads, Mr. James Bird, Clerk of the London County Council, has given the definite assurance that "when normal conditions are resumed after the war, the question of arterial roads will engage the Council's earnest attention." From this correspondence we derive, therefore, the twofold gratification that both the Institute and the Council are keeping in mind a vital element in the re-planning of London. In the Clerk's letter, reference is made to the "considerable expenditure" involved—an expression that puts the case rather mildly. For "considerable," he might have written "gigantic," but then the phraseology would have exceeded official caution. Yet the fact must be faced; and one rather wishes that, at a time when the public have become only too familiar with the idea of enormous expenditure, it were possible to put before it an approximate estimate of the cost of solving London's traffic problems, and of establishing the plan of Greater London on a rational basis. Whatever the initial cost, it will represent a splendid investment, and we can only trust that the subject will be tackled courageously. A timid and vacillating policy would not only ruin a grand scheme, but would actually be financially bad.

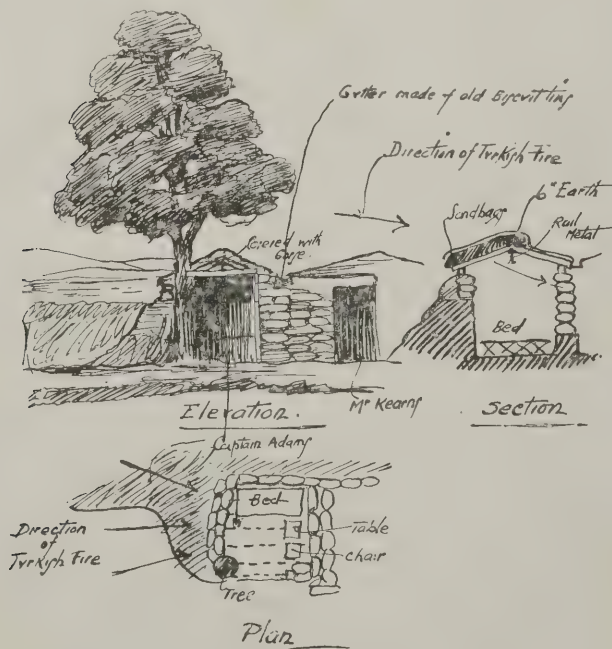
Established sixty-six years ago, the Architects' Benevolent Society has never in its history had so great a strain upon it as that resulting from the great war. Besides its normal function of relieving the needs of the poor who are always with us, it has to meet many cases of distress occasioned by the sudden cessation of income among those of whom many, in ordinary circumstances, would be contributing to the funds instead of drawing upon them. As Mr. Ernest Newton said when presiding at the annual general meeting of the society, "It is the duty, and the privilege of those who are still earning a professional income, as well as of those who are in the enjoyment of private means, to assist the less fortunate by every means in their power." He added the reminder that "the difficulties of those who are in receipt of the small help we are able to give them are much aggravated by the higher cost of living." His assurance, from personal observation, that the funds are administered with wisdom, delicacy, and tact, was hardly necessary, though it certainly lends a grace, as well as a suggestion of pathos, to an appeal that needs no words of ours to commend it. So far, the outside public have not been asked to assist, and it is hoped that this wider casting of the nets may not become necessary. If the Government could be induced to make a substantial grant, that would be mere justice, seeing that it is mainly through official action that architects have been impoverished; but such an act of reparation seems wildly improbable, and we trust that the society will weather the storm without seeking extraneous aid.

A list reprinted from the "Sheffield Daily Telegraph" shows the values of goods imported from Germany during the last two complete years before the war. These articles represent a total value of eighty million pounds sterling, and the question asked by our contemporary is, in effect, Why should we not, after the war, refuse to send all this money, or any considerable portion of it, to Germany? "If," it is asked, "Germany were wiped off the map of Europe to-morrow, should we be handicapped in any way?" As with questions beginning with *num*, the answer "No" is taken for granted. For more than a year, it is argued, we have done without these dumps from Germany; why, therefore, should we not continue to do without them? It is a fascinating view, but we fear, somewhat illusory. Sentiment will not control the markets; and the extent to which we resume trading with Germany will depend, sooner or later, upon the

ability of that country to supply us with better bargains than we can obtain elsewhere, at home or abroad. That is the hard fact which our traders have to face, and that is why we so persistently harp on the necessity for efficiency and economy in production. By far the largest items in the long list of our imports from Germany are those relating to iron and steel, which amounted to nearly six millions in 1912, and to nearly eight millions in 1913. In the two years, our imports of zinc came to nearly three millions and a half, while the same period brought us painters' colours and pigments to the total of nearly two millions. If we can dispense with these German supplies with advantage to ourselves, we shall of course do so, but not otherwise. Of the vast majority of articles on the list, however, it may be safely said, we think, that they could be advantageously produced in this country, and that this fact is realised there is gratifying evidence in the building of a large number of new factories to meet the new conditions. In the matter of manufactures, we should, of course, like to see our own country entirely self-sufficient, but we fear that that is an unattainable ideal.

HERE AND THERE.

TO the honour of the architectural profession let it be set down prominently that the R.I.B.A. roll of men serving with the Forces now stands at 2,250, a splendid figure when we recall that the total number of men in the architectural profession in this country, principals and assistants, is about 10,000; so that nearly one-fourth are now in the Army. Moreover, there are the attested married architects, who, though they are not actually serving, are members of the Army Reserve. From those abroad we have had many an intimate glimpse of what life at the Front is like. In these columns I have given several particular references, and as supplementing the description of a "dug-out" at Cape Helles sent by my colleague Mr. Howling I now append a sketch of a different type of "dug-out" on Gallipoli, which has been forwarded by Captain W. N. Adams, R.A., an architect who went through his training at the Liverpool School of Architecture, and who has been wounded since this sketch was made, though not while in his "dug-out." It will be seen from the sketch that this type of "dug-out" is quite different from Mr. Howling's. Instead of being subterranean it is built up from the ground, and the



AN OFFICER'S DUG-OUT AT CAPE HELLES.

reader will take particular notice of the way in which the walls and roof are constructed, and how a gutter improvised out of biscuit tins. This sketch has been passed for publication by the Press Bureau, so I am not at all anxious about being arraigned in consequence of its appearance.

Despite the War, it is "building as usual" with the merle and the mavis, and remembering our good Chaucer and his merry verse-making I should be quite properly Spring-like in bursting into poetry. The afflatus must be curbed; so I will keep to professional text, and content myself with these lines by J. G. Holland—

"Can you tell me why
Men with a taste for art in finest forms
Cherish the fancy that they may become,
Or are, art's masters? You shall see a man
Who never drew a line nor struck an arc
Direct an architect, and spoil his work,
Because, forsooth! he likes a tasteful house!
He likes a muffin, but he does not go
Into his kitchen to instruct his cook;
Nay, that were insult. He admires fine clothes,
But trusts his tailor. Only in those arts
Which issue from creative potencies
Does his conceit engage him."

I cannot answer the riddle. But every architect knows the member of the Building Committee who, in utter ignorance of things architectural is no bar to his insistence on the things he "likes," or the client who, after the house is at length completed, proceeds to carry out those personal additions which make the architect blaspheme when he sees them.

It was typically Elizabethan that John Thorpe, the early bird of the architectural profession, should have written on the plan of his own house:—

Thes 2 letters, I and T,
Joyned together as you see,
Is ment for a dwelling-house for me,
John Thorpe.

You will notice that he did not write "J" and "T," but "I" and "T." "J" was a mere flourish of the "I," a fancy introduced by the Dutch, a fancy that made the clerk write "iij" instead of "iii" when he was entering on the bill of costs an item of threepence for the carpenter. Certainly "J" was not known to the Latin nor was "U," and that leads me on to this little blurb in "Printers' Ink":—

Now that we possess the U, with soft and graceful curve,
Of unexcelled docility and willingness to serve,
Why do they carve United States and public schools
and such,
And make the English language look as funny as a Dutch,
With restaurant and Pullman car and university,
And other marks of educational perversity?
That V impresses some of us as cheap and gaudy blarney
Which parvenus may put in place of more substantial stuff,
But people who are fashioned out of unpretentious clay
View all such affectation with an unassumed disgust
Such exhibitions always make me very gloomy and blue
Now, honest Injun, don't they have the same effect on you?

It will not do for the architect to cite Roman precedents when he sets out "at great" for the carver, "Lamb Union" or "City Buildings," because he might be asked to be consistent in all things, and observe the fact that the Roman speaking his alphabet would have said a-bee-see, but ah-bay-kay. So let him reflect on the moral of the verse, and not shock the local councillors at the opening ceremony. UBIQUE



MONUMENTS. XVII. — MONUMENT TO BUDD FAMILY IN CHURCHYARD OF ST. MATTHEW'S, BRIXTON, LONDON, S.W.



DETAILS OF CRAFTSMANSHIP (SERIES II.). VII.—CARVED WOOD TERMINAL TO DOORCASE,
WOODCOTE PARK, EPSOM,



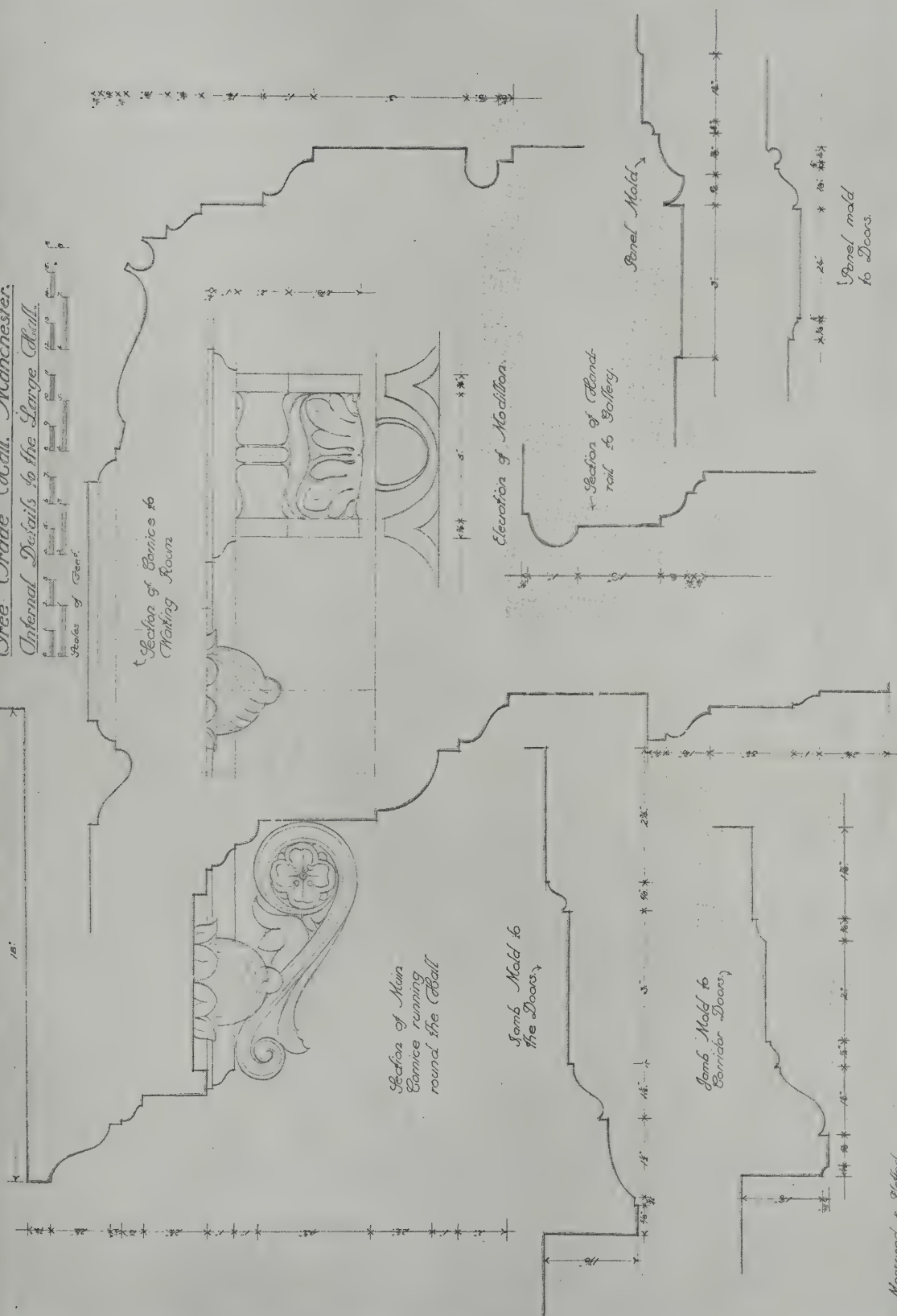
Cedar Lodge, Blackheath, London, S.E.



Office, Bury Street, Bloomsbury, London, W.

Free Trade Hall. Manchester.
Internal Details to the Large Hall.

Internal Details to the Large Hall.

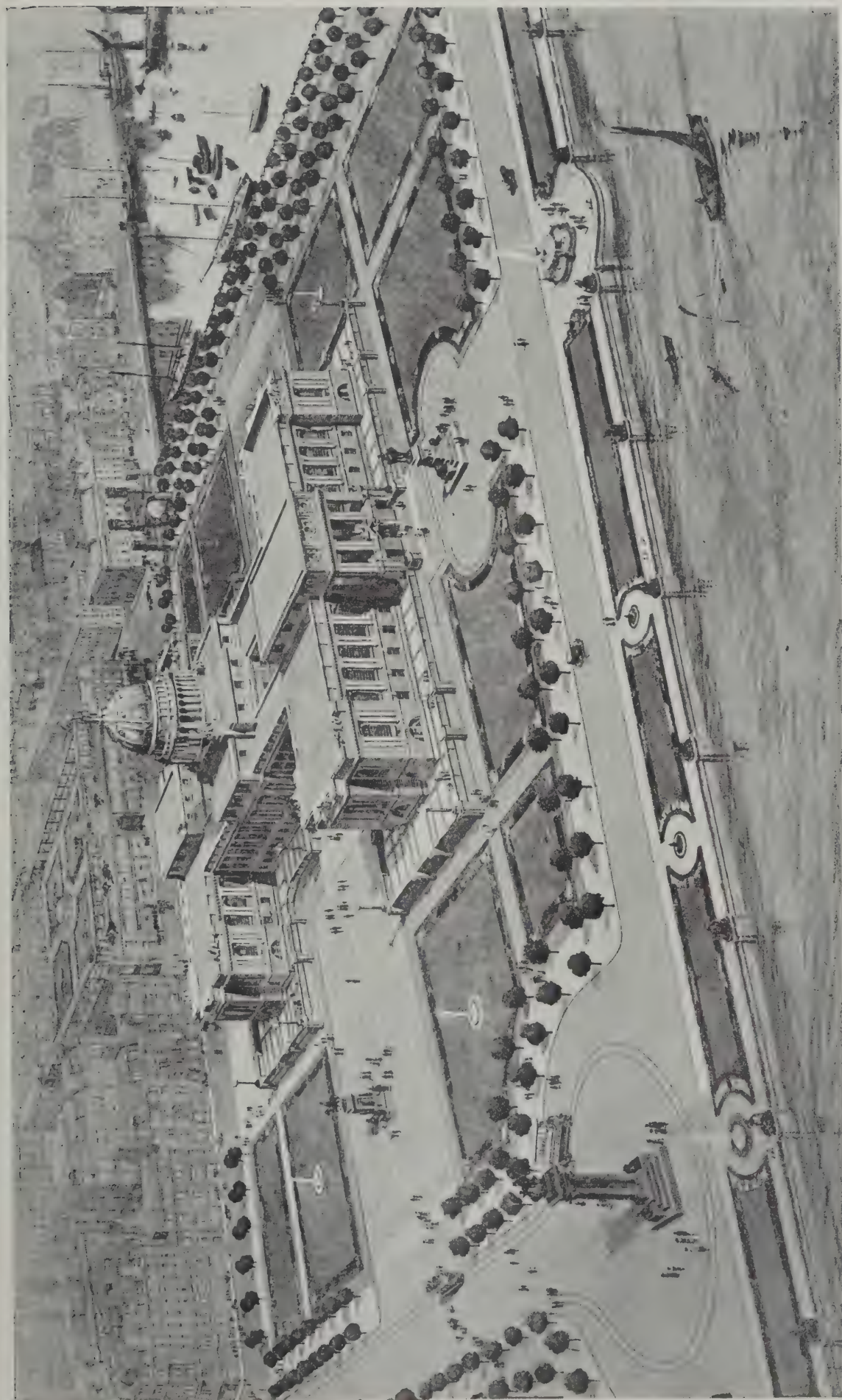


Measured & Plotted
on the Spot Oct 1915.

STUDENTS' DRAWINGS (SERIES II). XXI.—FREE TRADE HALL, MANCHESTER: INTERNAL DETAILS OF LARGE HALL.
MEASURED AND DRAWN BY GORDON HEMM.

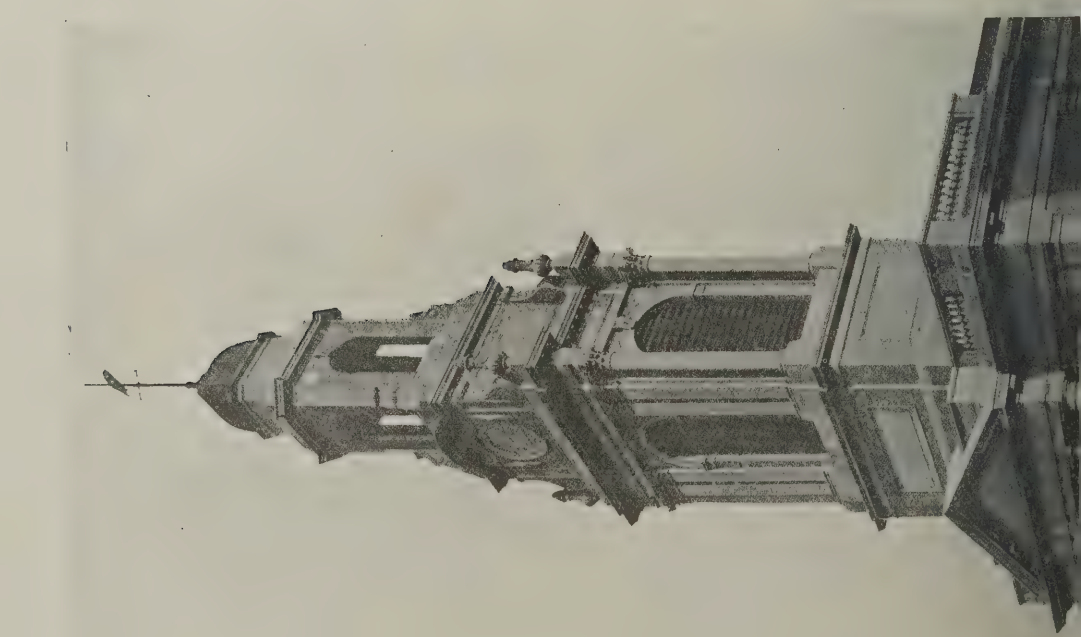
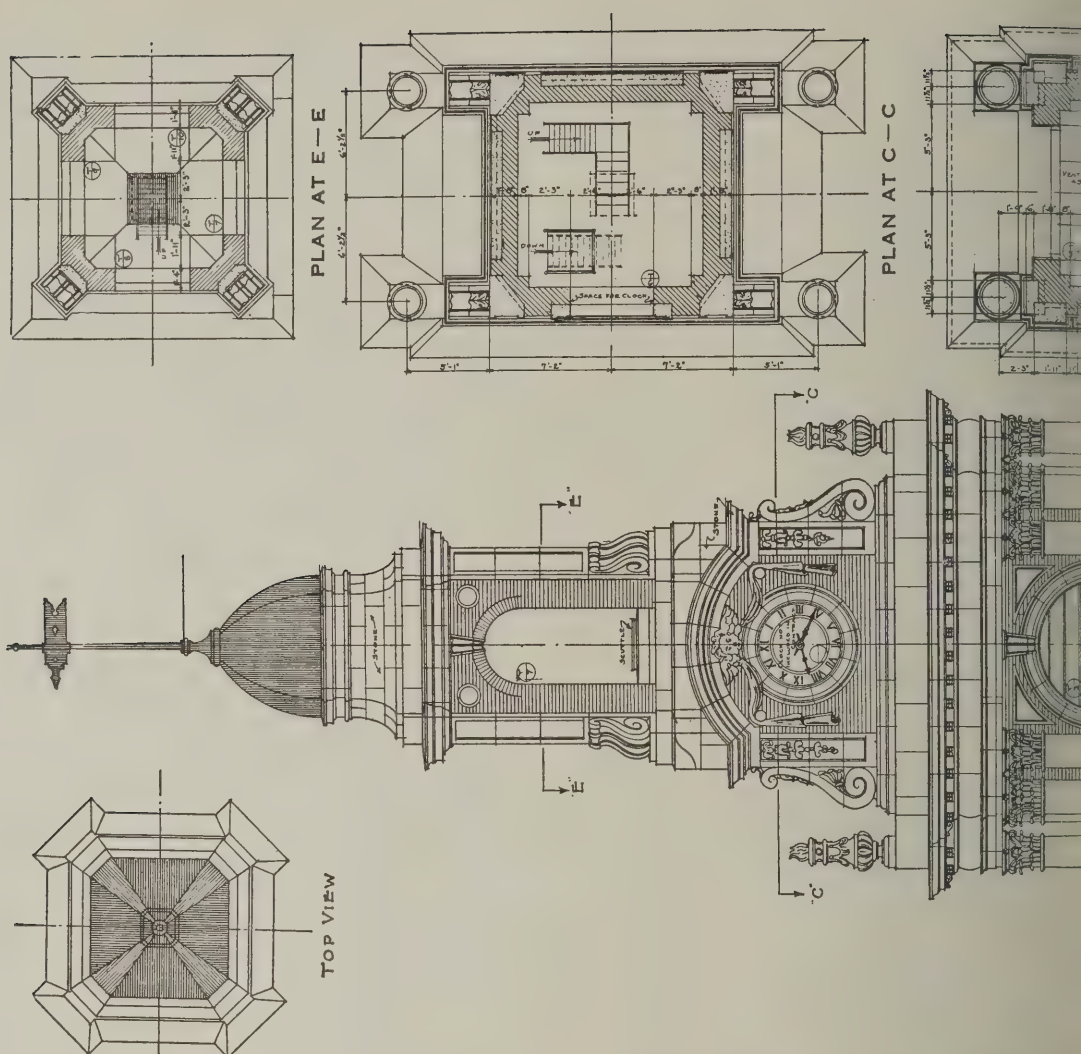


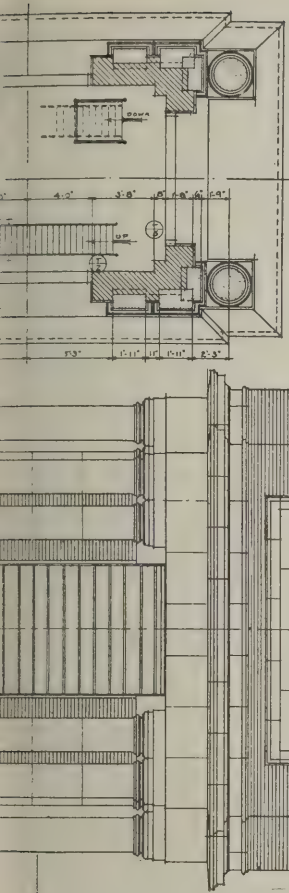
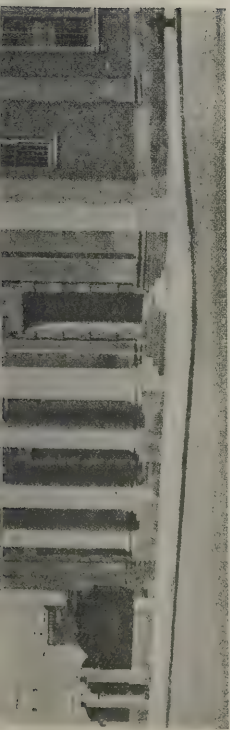
DOORS AND DOORCASES. 1.—AT 26 HATTON GARDEN, LONDON, E.C.



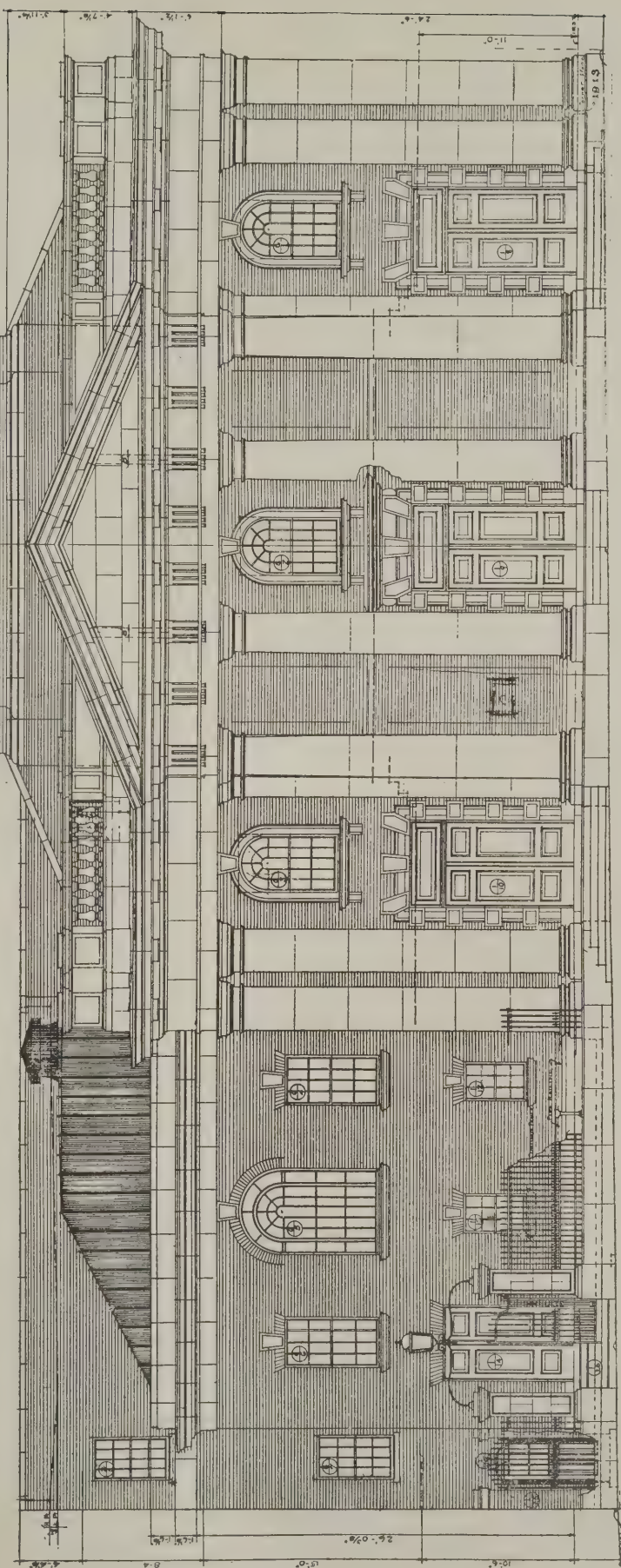
CURRENT ARCHITECTURE (SERIES III.). XXXI.—DESIGN FOR CIVIC CENTRE, DUNDEE.

JAMES THOMSON, CITY ARCHITECT.





PLAN AT A-A



MODERN AMERICAN ARCHITECTURE. XLIV.—WEST PARK PRESBYTERIAN CHURCH, NEW YORK.
CARRÈRE AND HASTINGS, ARCHITECTS.

THE PLATES.

Monument in St. Matthew's Churchyard, Brixton.

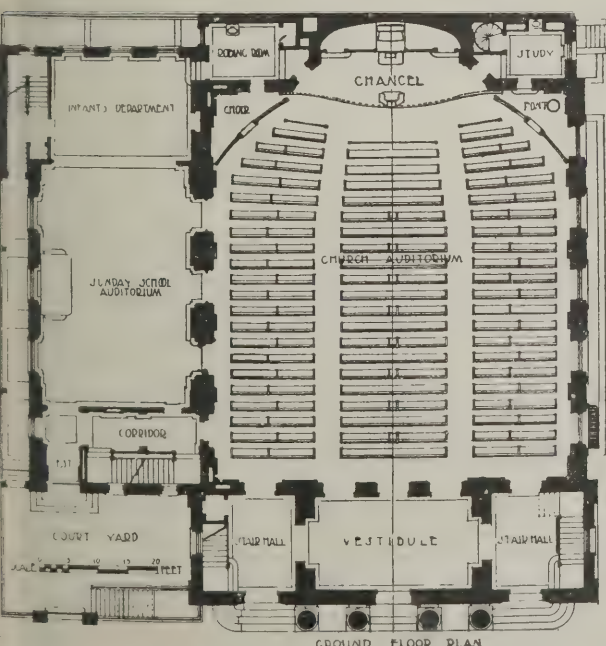
THE church of St. Matthew, Brixton Hill, was erected in 1822-4 from designs by C. Porden, and is one of the best of those Greek Revival churches that distinguished the first quarter of the nineteenth century. At one end of the churchyard is the monument which we illustrate. We have not been able to ascertain who designed it, but the monument appears to be practically contemporary with the church itself, for the inscription states that it is erected to the memory of Richard Budd, who died on January 30, 1830, subsequent interments of the deceased's sister and daughter having been made in the 'fifties. It is a very striking monument, although the effect of piling Pelion on Ossa is rather overpowering—more especially on account of the lumpy stele terminal. Clearly the aim of the designer was to obtain a pyramidal form with the four stages, and he has contrived the breaks very skilfully; the urns, too, at the base fill in the spaces quite admirably, and lead the lines down on to the three steps. The second stage bears symbolic signs, such as the serpent with its tail in its mouth, and the Greek fret, suggesting continuity, while above is a dove against a sunburst. The monument stands on a granite base, but the upper portion appears to be of some patent stone, such as Coade's.

A Carved Wood Terminal.

Woodcote Park, Epsom, a house built originally in the eighteenth century, and extensively altered in later years, has recently been acquired by a Golf Club, and many of its former embellishments (chimneypieces and the like) have been removed; but it still contains some interesting woodwork, of which the carved terminal shown on the plate is a good example. This carries on the robust quality of Wren's work, with the added gracefulness characteristic of eighteenth-century craftsmanship.

West Park Presbyterian Church, New York.

This new church by Messrs. Carrère and Hastings is very reminiscent of English work, and for its steeple St. Mary-le-Strand would appear to have furnished inspiration. The brickwork is of a buff colour, laid in Flemish bond with light mortar joints. The columns



WEST PARK PRESBYTERIAN CHURCH, NEW YORK.
CARRÈRE AND HASTINGS, ARCHITECTS.

and dressings are of Indiana limestone. The structure is of steel, fireproofed throughout, the floors and flat roofs being of concrete slabs, and the pitched roof of tile covered with copper. The large windows have metal sash-frames filled with cathedral glass. The seating capacity of the church, including the gallery, is 800.

Two Small Georgian Houses.

These are quite simple little buildings, but each is interesting as showing the good effect that can be obtained in an unpretentious manner when proportions are carefully studied.

Details of Free Trade Hall, Manchester.

The internal details of the large hall are shown on the plate. The mouldings, it will be noticed, are of good contour.

Doorcase, No. 27, Hatton Garden, London.

No. 27, Hatton Garden, now demolished, contained some excellent woodwork of early eighteenth-century date; certain rooms, with panelling, chimneypieces, and doorcases, were acquired for the Victoria and Albert Museum, and can now be seen complete at South Kensington. The doorcase which we illustrate was originally in the drawing-room. It is of deal, in the style of James Gibbs. The vase in the pediment gives it a focus of interest.

Civic Centre, Dundee.

The Civic Centre forms part of one of the schemes of town planning for Dundee prepared by the City Architect, Mr. Jas. Thomson. In addition to the buildings shown, the scheme provides for the improvement of the frontage of the River Tay for some distance westward, and the reclamation of eighty-five acres of land. There are also included in the scheme, and now in progress, the clearance of an insanitary area situated to the north of the Civic Centre, the erection of a City Hall, also in progress, and the provision of public markets and business premises which are to be proceeded with after the War. The part of the scheme in progress and the public markets and business premises are estimated to cost £370,000. The site of the Civic Centre is occupied at present by an old dock and several unimportant buildings. It is immediately opposite the two principal railway stations and within 100 yds. of the centre of the city. In his report on the subject the City Architect states that it is a site which, by reason of the possibilities it offers for treatment, its suitability of position, and cheapness of acquisition, is seldom within reach of a community.

FOR MEN AT THE FRONT.

Architects among the Forces abroad would be very glad if they could receive regularly a copy of this Journal, in order that they might keep in touch with what is going on at home in connection with the profession they have so patriotically relinquished in order to fight for their country. We ourselves are unable to get into touch with them, for the simple reason that we cannot ascertain the detailed indication of their regiments, but readers who are still at home and are in communication with them are in a position to meet the difficulty, and we therefore suggest to them that when writing to men with the Armies in France or elsewhere abroad they should enclose this announcement—that we are prepared to send out the Journal to men at the Front week by week for six months, for the special reduced subscription of 7s. 6d. post free.

All remittances and inquiries should be addressed to

The Publishers,
ARCHITECTS' AND BUILDERS' JOURNAL,
27-29, Tothill Street, Westminster.

R.I.B.A. ANNUAL REPORT.

THE report of the Council of the Royal Institute of British Architects for the year 1915-16 is to be presented at the annual general meeting to be held on May 1, at 4.30 p.m. The following are some extracts from it:

During the past year 33 Fellows and 44 Associates have been elected, making the present total subscribing membership (Fellows, Associates, and Hon. Associates), 2,583. There are now 1,919 Licentiates on the roll.

The following grants have been made by the Council: Architectural Association, £500; Architects' Benevolent Society, £100; Architects' Volunteer Training Corps, £50; Artists' War Relief Exhibition, £10; Society of Dilettanti, £50; British School at Rome, £50. In addition to the special grants to the Architectural Association which were mentioned in the last annual report, the Council have been enabled to present to that body a further sum of £400. Of this amount £200 was paid in respect of the financial year ending December 31, 1915, and £200 in respect of the current year.

The grant of £50 to the Society of Dilettanti was the result of an undertaking entered into before the War to enable the society to publish their new volume of "Antiquities of Ionia."

The Architects' "Record of Honour."

The Record of Honour which has been compiled by the R.I.B.A. now contains the names of some 2,250 architects who are serving in the Forces. Included in this number are 57 Fellows, 426 Associates, 228 Licentiates, and 272 Students of the Royal Institute. The following is a list of those members of the Institute who have so far lost their lives in the War:

Associates.

- L. K. Adams* (Lieut., 7th King's Liverpool Regt.).
- S. E. Barrow† (Lieut., 5th Bn. King's Own Royal Lancaster Regt.).
- J. E. Bownass* (Princess Patricia's Canadian Light Infantry).
- L. J. Finning* (Sergt., 24th Bn. 6th Australian Infantry Brigade).
- E. H. Gibson† (Lieut., Royal Naval Volunteer Reserve).
- J. N. Horsfield† (Lieut., Royal Naval Volunteer Reserve).
- W. Hoyle† (Royal Fusiliers).
- G. E. Hunter* (Capt., 6th Northumberland Fusiliers).
- G. A. Kay* (2nd Lieut., 2nd Notts and Derby Regt.).
- W. L. B. Leech† (Rifleman, 9th County of London Regt.).
- A. E. Lowes* (A.S.C., 6th Northumberland Fusiliers).
- L. A. Phillips* (Sergt., Public Schools Bn., Royal Fusiliers).

Licentiates.

- G. P. Bowie* (Capt., 5th Bn. 1st Canadian Contingent).
- A. Dickenson† (Sub-Lieut., Royal Naval Volunteer Reserve).
- C. R. Harrison† (Lieut., 3rd Leicester Regt.).
- C. H. R. Hemman* (Quartermaster-Sergt., 1st Field Co., Divisional Engineers, R.N.D.).
- A. M. Phillips* (Capt., 11th King's Own Yorkshire Light Infantry).
- H. C. Pullin† (Rifle Brigade).
- A. Wingate* (2nd Lieut., 9th Highland Light Infantry).

Students.

- T. W. Dowsett* (Sergt., Hon. Artillery Company).
- E. G. D. Fromart† (Lieut.-Cpl., 1st City of London Sanitary Company, R.A.M.C.).
- A. T. Hardman† (Lieut., Royal Fusiliers).
- T. B. D. Hough* (2nd Lieut., 8th East Yorkshire Regt.).
- J. K. Irvin* (4th Bn. Seaforth Highlanders).
- F. H. Lawson* (Capt., 5th Bn. Northumberland Fusiliers).
- C. J. Newbery† (Private, 3rd Royal Fusiliers).
- T. E. Turner* (Lieut., 13th County of London Regt.).
- J. B. M. Walch* (2nd Lieut., 2nd Royal West Surrey Regt.).
- D. H. Walkert† (Capt., 5th P.W.O. Yorkshire Regt.).
- L. G. Whitbread† (Private, 1/6 Bn. Manchester Regt.).
- H. M. Whitehead* (2nd Lieut., 4th East Surrey Regt.).

* Killed in Action. † Died of Wounds. ‡ Died on Service.

Most of the architectural students are serving, and there is, consequently, a heavy fall in the receipts from examination fees. The subscriptions of all members and Licentiates serving are also remitted; in 1915 this measure cost the Institute some £700, and in 1916 it will probably cost well over £900. But in spite of these and other losses there was a realised surplus of £719, in place of an anticipated deficit of £260, in the financial year ending December 31, 1915, and a moderate surplus is also anticipated in the current year.

Board of Architectural Education.

During the year 104 "Problems in Design" were received and adjudicated on, 66 being approved. The new scheme of examinations has been postponed until after the War, but the Council, on the recommendation of the board, have decided to discontinue the Preliminary Examination for the future. Candidates for registration as Probationers will be required to submit any of the certificates mentioned on page 410 of the "Kalendar," or such other satisfactory evidence of their education as may be approved by the board. The board will still continue to examine in the subjects of geometrical drawing and the elements of perspective, and in free-hand drawing, those candidates who are unable to produce satisfactory drawings showing their knowledge of any of these subjects. The Council have also decided to hold the Intermediate and Final Examinations once only this year—in June.

The Council referred to the board an application from the American Institute of Architects suggesting that a collection of English architectural drawings both of buildings and of woodwork, metal, glass decoration, and furniture should be formed and forwarded to the Architectural School at Harvard with a view to their making a selection for purchase, and a sub-committee is now engaged in the work of selection.

The certificate of the three years' architectural course at the Leeds School of Art is now accepted by the board as exempting from the Intermediate Examination, the condition being that for the examination at the close of the course an External Examiner approved by the board is appointed.

Town Planning and Charing Cross Bridge.

The volume of transactions of the R.I.B.A. Town Planning Conference, 1910, contains a large amount of valuable information, and in order that this might be generally available, the Council, on the committee's recommendation, have agreed to the price of the volume being reduced to 10s. 6d. (the original price being 24s.). A limited number of copies of the transactions of the conference are still available at this reduced figure.

A proposal submitted to Parliament by the S.E. and C. Railway Co. for the construction of steel arched cantilevers and additional masonry piers under the eastern portion of the Charing Cross Railway Bridge, estimated to cost £150,000, has been considered by the Town Planning Committee, and on the committee's recommendation the Council of the Institute approached the London County Council with the suggestion that the basis of their opposition should if possible be broadened to avoid so large an expenditure on the present unsatisfactory structure, especially in view of the possibility of the eventual removal of the station to the south side

and the need for a road bridge at this point. The L.C.C., while sympathising with the views of the Institute on the matter, do not, however, see their way to take the suggested action. The Bill is now being considered by a Committee of the House of Lords. By a resolution of that House moved by Lord Plymouth, it is an instruction to the House of Lords Committee to hear evidence from the R.I.B.A. and the London Society, and efforts are being made to secure proper consideration of the whole question of road communication across the Thames at Charing Cross.

The Art Standing Committee state that the proposal to do away with the picturesque wooden bridge over the Thames at Goring, and to substitute one of reinforced concrete construction, has been abandoned owing to the Treasury declining to sanction the cost of rebuilding. The bridge, therefore, will merely be repaired.

Questions of Professional Practice.

The Practice Standing Committee state that questions having been raised as to the position of the architect and his paymen in connection with the employment of expert engineers or other specialists to advise upon special matters or to design details as in the case of reinforced concrete structures or those consisting largely of metal or in the case of large electric or heating installations, a sub-committee has been appointed to consider the whole question.

The revision of the Institute Handbook on Dilapidations has now been completed and the draft submitted to the Council with a recommendation that a new edition be issued.

At the request of the Council, the committee considered and reported upon the custom of architects entering the witness box to disparage the work and belittle the claim to payment of brother architects who were unfortunately compelled to sue for their fees. As a result of the committee's report, the Council have added to the paragraphs upon professional conduct, and published in the "Kalendar," the following: "That in the opinion of the Council the Royal Institute having adopted a scale of professional charges, it becomes the duty of members, when giving advice relating thereto, not to weaken the value of the scale."

The committee have had before them several complaints as to advertising by members, and draw general attention to the Council's opinion that advertisement by an architect is a contravention of B. law 24.

The question having been raised as to the number of hours which should be considered to constitute a professional "day" as the term "day" is employed in the Schedule of Charges, the committee thought the matter of sufficient importance to justify direct inquiry by the Council who, in the "Journal" of July 31, 1915, invited communications from members upon the point, and also directed enquiry to be made as to the views of allied societies and the practice of kindred institutions. Up to the present no decision has been arrived at.

Technical Points.

The Science Standing Committee are taking steps to collect such information as is possible of the effect of enemy bombs on buildings and the resistance of the various materials employed in the structures, and have sought the co-operation of the District Surveyors' Association. It is anticipated, however, that there will be co-

In concluding the report the Council wish to urge upon all those in a position to do so the necessity of supporting the Society in its efforts to relieve the distress existing so acutely at the present time.

CONCRETE AND STEEL SECTION

(MONTHLY.)

NEUTRAL AXIS AND MOMENT OF INERTIA BY GRAPHICAL METHODS

BY F. E. DRURY, F.I.S.E., M.C.I., Head of the Department of Building and Civil Engineering, Royal Technical Institute, Salford.

THE following article is a continuation of the subject which has been treated mathematically in previous issues of this Journal.

For purely graphical methods of checking the position of the Neutral Axis in reinforced concrete beams, the elementary principles applied to an irregular section of one material need explanation.

The method is based on the following representation of the moment of a force, which is equally applicable to the moment of an area.

Referring to Fig. 1; let the moment of force F be required about the point P . Then moment about P , $(M_P) = F \times d$. Draw a line through P parallel to F . Set down F to a force scale at a .—Choose a point O , and form the triangle $a b o$; drop a perpendicular from o to $a b$; call this "h."

Take any point O_1 in force line F . Draw parallels from o_1 to $o a$ and $o b$ across the space d . Drop a perpendicular to $a_1 b_1$ from o_1 . Its length is "d." This reciprocal figure is to a linear scale.

Then, by similar triangles $\frac{a b}{a_1 b_1} = \frac{h}{d}$
 $\therefore a b \times d = a_1 b_1 \times h$. But $a b = F$.
 $\therefore F \times d = a_1 b_1 \times h$.

Now $F \times d$ is the M_P . $\therefore a_1 b_1 \times h = M_P$, and $a_1 b_1$ is measured to the linear scale, while "h" is measured to the force scale.

For our present purpose the main fact is, that to some scale (depending on "h") any ordinate of the triangle $o_1 a_1 b_1$, parallel to $a_1 b_1$, correctly represents the moment of the force F about a point in the line of the ordinate produced.

Consider Fig. 2, which is the cross section of a cast-iron girder. Find the sum of the moments of the three rectangular areas about XX by concentrating each area at its CG. Think of these areas as forces, and set them down successively at $a b c d$, using Bow's notation. Construct polar diagram.

For each area, independently, draw the moment diagram about line XX . Take any point in line AB , draw parallels to $a o$ and $b o$ intersecting at $a_1 b_1$, which intercept represents the moment of area AB about XX . Add moments of areas BC and CD to this, as shown, by drawing lines parallel to $c o$ and $d o$. Then $a_1 d_1$ equals the sum of the moments about XX , all to the same scale, because "h" is the constant height of the three triangles in the force diagram.

Produce $d o_3$ to intersect $o_1 a_1$ at "p." Then the point of intersection is the position at which the whole area could be massed up to have the same moment about XX as the sum of the moments of the separate areas, for $p d_1$ is parallel to $d o$, and $p a_1$ is parallel to $a o$, and the triangle $p d_1 a_1$ is similar to $a o d$. Hence $a_1 d_1 \times h = a d \times x$, and the CG (or neutral axis) is distant x from the base XX .

Again, by the same diagram we have $p q$ as the representation of the moment of area CD on one side, and the sum of the moments of areas AB and BC on the other. These are equal about the line $p q$ (and NA) and fulfil the definition given in previous articles.

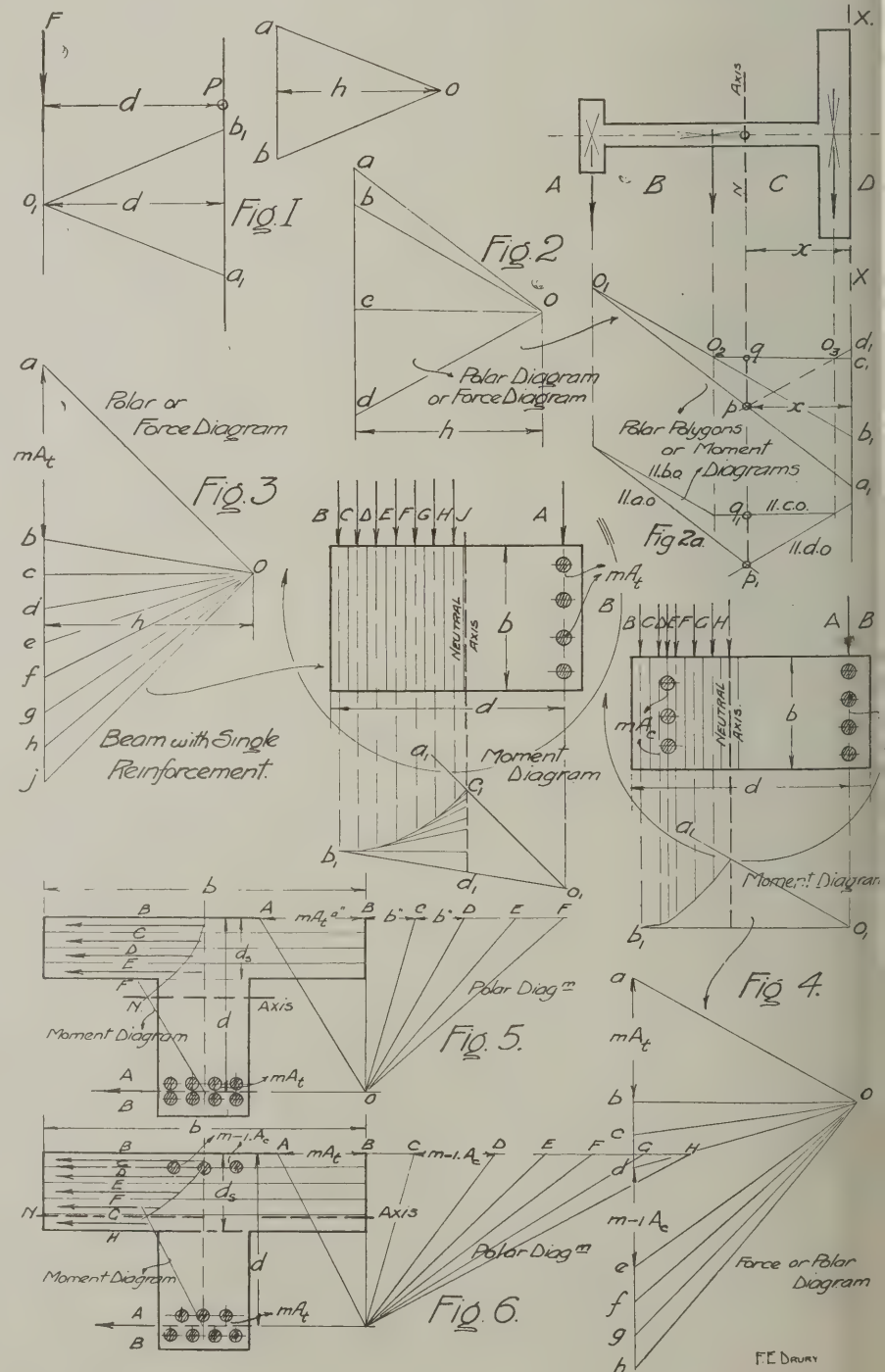
Reinforced Sections.

We have now a basis on which to work out the position of the NA in reinforced

concrete sections, using, as before, equivalent area of the steel to replace concrete.

Then $m A_t$ will take the place of tensional steel and $(m-1) A_c$ of the compressional steel where this exists.

We have one difficulty to note which does not occur in the irregular section of one material, viz.: we do not know amount of area of concrete in compression, but have to decide it.



is necessary to work upon the previous statement that the NA is in such a position as to cause the moment of the equivalent tensional area (mA_t) to be equal to the moment of the compressional concrete area (with the moment equivalent area of compressional steel added, where such occurs).

Notice that in the moment diagram of Fig. 2 we need not have drawn all the lines, but, having proved the correctness of the working, might have drawn the necessary lines only, shown in Fig. 2a. Now, which carries out the usual method of lettering by Bow's notation. The polar (force) diagram is drawn and the reciprocal figure reproduced by drawing lines across similarly lettered spaces, parallel to those of the polar diagram and producing the first and last vectors to intersect at p_1 . This reduces the work and that needs to be reproduced in future examples.

Single Reinforcement—Rectangular Section.

Problem.—To determine how much concrete is required to come into compressive action to produce the same moment of area about an intermediate axis (NA) as the steel employed. Consider steel as equivalent concrete of mA_t area. Divide the compressional side into units of depth of beam, carrying the same moments a little below the centre of the beam.

Proceed clockwise, starting at A, because this is the definitely known area provided use.

Set out line of areas (similar to loads). $b = mA_t$ (sq'').

$c =$ area of $1 \times b$ (sq''), and c, d, e, f are equal to b .

Take any point in line AB; draw vectors (links) parallel to a_0 and b_0 , the latter continued right across depth of beam to

From intersection of BC line with draw links across respective spaces E, etc., parallel to polar lines c, d, e , etc., towards, to meet the first link a_1 at Drop perpendicular c_1d_1 . Then c_1d_1 line about which mA_t and the area of concrete to the left have equal moments. This is the result we seek, and NA is selected above it.

Notice that we only use such polar lines and links as are necessary to introduce area between NA and the top edge of beam, though more may have been set on the load line.

The lines in the moment diagram, carried across to c_1d_1 show the separate moments of the unit areas summed up for equality. These will in future examples be omitted.

Note.—For "inertia" purposes the lower level b_1o_1 (or any corresponding) is in the moment diagram and the upper for measuring the area; hence b_0 is often set out at 90° to the load line and a defined length which is an easy error.

Double Reinforcement.—Rectangular Section. The same procedure applies in this as the previous case, with the introduction of the compressional steel (equivalent $m-1A_c$) between the units of depth of the concrete; see Fig. 4.

Tee Beams.—Single Reinforcement.

In tee beams only the slab (or table) is considered to provide resistance to compression, for if the NA is situated

below the slab the difference in resistance due to the inclusion of a portion of the leg between the axis and the slab is very small and negligible.

The procedure for determining the position of the NA is carried out exactly as before. In these drawings (see Fig. 5) opportunity has been taken to show an alternative arrangement of the diagrams in order to economise space. The same arrangement may be accepted for any other sections, or all may be carried out in a similar position to Figs. 3 and 4.

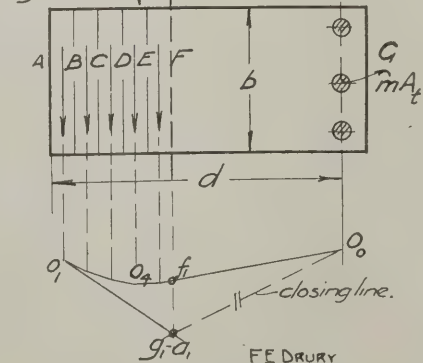
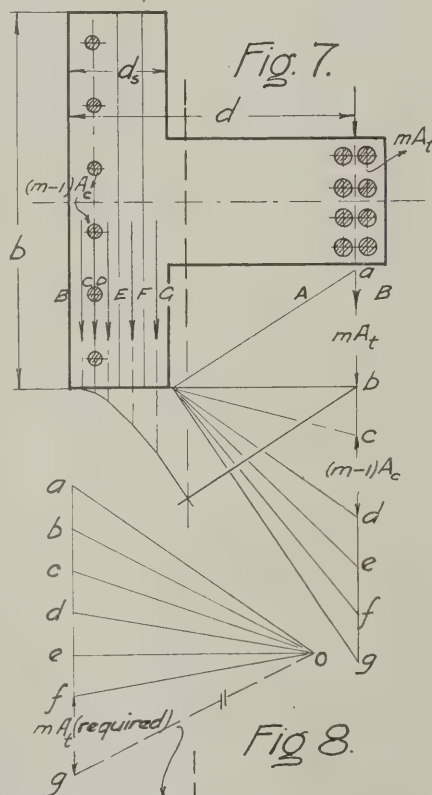
The only objection to Figs. 5 and 6 is the intersection of diagrams.

Tee Beams.—Double Reinforcement.

Fig. 6 illustrates the application to a tee beam with double reinforcement. The working is identical in principle with Fig. 4, the slab being so thick as to cause the NA to fall within it. Fig. 7 illustrates the result where the proportions of steel and dimensions of beam cause the NA to fall below the slab, and is arranged in the unnatural, but more easily understood, position of Figs. 3 and 4. The three diagrams are grouped as closely as possible without undue overlapping.

Computing Steel.

Let it be required to find the amount of steel to give a defined position of the NA



in order to develop a specified M_R by the compressional concrete.

Draw the beam section as in Fig. 8. Place the NA at the required depth from the top surface. Then the moment of the equivalent area for steel about NA must be equal to that of the concrete above. Set out the load line for the unit areas above NA. Obtain moments of these units about NA as at a_1f_1 . Produce o_1f_1 to intersect steel line; join to a_1 on the neutral axis line and draw parallel from o to the load line in the polar diagram.

Then f_1g_1 is "m" times the area of steel required, for its moment is a_1f_1 about NA and agrees with the moment of the concrete.

Many other applications are possible, but these are sufficient to indicate the usefulness of the method.

Moment of Inertia.

We must now consider the second part of our subject, viz.: graphical determination of the moment of inertia or second moment of the section of a reinforced concrete beam.

The "least value" is the inertia about the neutral axis. This may be determined by the following principle, which, as a first illustration of the method, is applied to a $6'' \times 4'' \times \frac{1}{2}''$ steel angle.

Construct, graphically, the position of the neutral axis, using the previous principles as per Fig. 9. This diagram, without any alteration, may be employed.

We have stated in a foregoing article that the inertia is expressed as "the sum of all such quantities as a y^2 " (or Σay^2) where "a" = a very small area and "y" = its distance from an assigned axis. Consider the I about NA.

$$\text{Then } I_{NA} = \Sigma ay^2.$$

From polar and moment diagrams in Fig. 9 we have by similar Δ s:—

$$\frac{e_1f_1}{y_1} = \frac{ef}{h} = \frac{a_1}{h} \left(\begin{array}{l} ef \text{ is an element of} \\ \text{area } a_1 \end{array} \right)$$

Multiply both sides of this equation by y_1^2 and divide by 2.

$$\text{Then } \frac{(e_1f_1)y_1}{2} = \frac{a_1y_1^2}{2h}.$$

But $\frac{(e_1f_1)y_1}{2} =$ area of part of moment diagram.

Let $A_m =$ total area of moment diagram.
 $= \Sigma$ all similar quantities (of area), as $e_1f_1o_1$; $g_1f_1o_2$, etc.
 $= \frac{\Sigma ay^2}{2h}.$

$$\text{Then } I_{NA} = \Sigma ay^2 = 2h A_m.$$

We have, therefore, a simple way of utilising the moment diagrams already prepared in determining the position of the neutral axis in the several examples.

The method for a compound section is identical with that for one material, because we have already employed the "equivalent section" of one material for that of the compound beam.

Two scales have been employed in this preparation, viz.: a "linear dimension" scale and an "area" scale in the "beam and moment diagrams" and "polar diagram" respectively.

Hence, from the above, adopting the proper scales we have: Area of moment diagram (A_m) to linear scale $\times 2$ polar distance (h) to area scale $= I_{NA}.$

The area may be obtained by the planimeter by triangular measurement, or by triangular and parabolic measurement

ENQUIRIES ANSWERED.

Reinforced Concrete Walls.

ENQUIRER writes: "Is it advisable to use brickwork for the external walls of a reinforced concrete building? Some authorities say that reinforced concrete external walls crack owing to the great differences at times, between the internal and external temperatures. It seems to me that with brick external walls a building would be wanting in homogeneity."

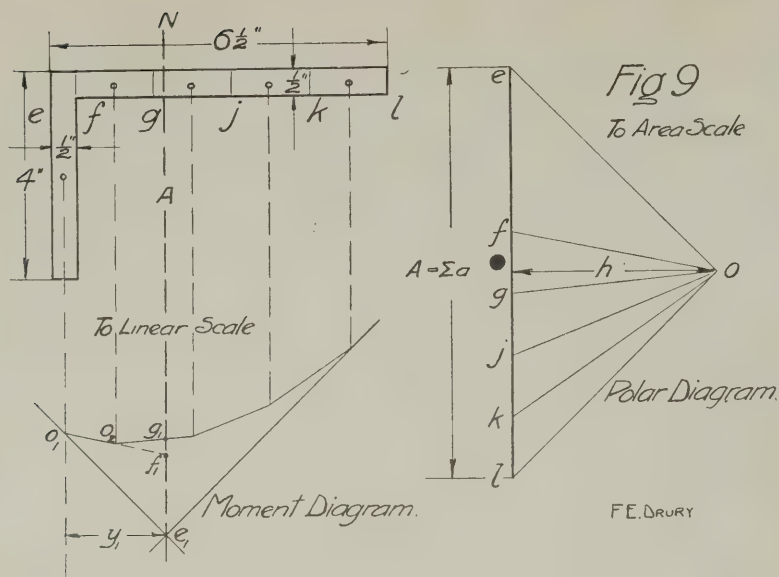
—Brickwork is preferred by reason of economy, the cost of formwork being a considerable item in the construction of reinforced concrete walls. The concrete walls do not crack by reason of temperature changes, but because of contraction due to hardening and drying out. Such cracking can be overcome by proper reinforcement. If a building is properly designed it will be just as stable with brick walls as with reinforced concrete walls, though certainly the monolithic character of a complete reinforced concrete building affords additional factors of safety against vibration, shocks due to bombs, etc.

H. K. I.

To Prevent Concrete Sticking to Mould.

C. O. (Wrexham) writes: "I am told that Russian tallow is commonly employed to prevent concrete sticking to the mould. As I find considerable difficulty in procuring Russian tallow, I should be glad to be informed of an efficient substitute."

—In the current issue of "Specification" (No. 18), which contains a very valuable section on reinforced-concrete work, the following paragraph appears: "In moulding concrete, the working surface of the mould should be coated in some way for every use to prevent the material sticking to it. Crude paraffin oil, or a mixture of Russian tallow and oil, is often used, undoubtedly soft soap allows the material more easily to leave the mould. The material depends upon the degree of compactness which is given to the structure of the concrete whether an oiled surface is satisfactory. In some cases the concrete will stick where oil is used, and even soft soap is found so advantageous as shellac. The latter is, of course, a little more expensive, but a shellac surface is advocated by many for a fine finish."



F.E. DRURY

combined, as the broken outline of the moment diagram closely approaches the parabolic arc.

Example.—A reinforced concrete beam is doubly reinforced. Its effective dimensions are 12" broad and 20" deep. Tensional area of steel (A_t) is 2.1 sq., and compressional area of steel (A_c) is 1.65 sq., situated at 2" from the top edge.

Find the position of the neutral axis, the I_{NA} , and determine the moment of resistance of the section. Suppose the stress in the concrete to develop 600 lb. sq. maximum, what is the stress in the steel?

In order to show equality of results by graphics and calculation, we shall determine the position of NA and value of I_{NA} by calculation first.

By first principles, taking moments about assumed axis n " from top edge (Fig. 10) we have:—

$$\frac{bn^3}{2} + (m-1)A_c(n-2) = mA_t(d-n)$$

$$m = 15, A_c = 1.65 \text{ sq.}, A_t = 2.1 \text{ sq.}$$

$$\therefore \frac{12}{2}n^3 + 14 \times 1.65n - 14 \times 1.65 \times 2 = 15 \times 2.1 \times 20 - 15 \times 2.1n$$

$$\therefore 6n^3 + 54.6n = 676.2$$

$$n^3 + 9.1n = 112.7$$

$$\therefore n = -4.55 \pm \sqrt{112.7 + 4.55^2}$$

$$n = -4.55 \pm 11.56$$

$$\therefore n = 7.01 \text{ (say 7")}$$

$$\text{Then } I_{NA} = \frac{bn^3}{3} + (m-1)A_c(n-2)^2 + mA_t(d-n)^2$$

$$\text{But } b = 12, d = 20, n = 7, d-n = 13, m = 15.$$

$$= 4 \times 7^3 + 14 \times 1.65 \times 5^2 + 15 \times 2.1 \times 13^2$$

$$= 1372 + 577.5 + 5323.5$$

$$\therefore I_{NA} = 7273 \text{ units}^{(1)}$$

$$\text{Then as } y_c = n = 7" \text{ and } y_t = d-n = 13"$$

$$Z_c = \frac{7273}{7} = 1039 \text{ units}^{(2)}$$

$$\text{and } M_R \text{ (considering compression)}$$

$$= Z_c c$$

$$= 1039 \times 600 \text{ lb.}$$

$$= 623,400 \text{ lb. inches.}$$

also

$$Z_t = \frac{7273}{m \times (d-n)} = \frac{7273}{15 \times 13} = 37.3 \text{ units}^{(3)}$$

Now "c" and "t" vary as the distances from NA, "t" being 15 times the value. "c" is to be 600 lb. sq."

$$\therefore t = \frac{c \times 15(d-n)}{n} = \frac{600 \times 15 \times 13}{7}$$

$$= 16,714 \text{ lb. sq.}''$$

$$\therefore M_R \text{ (considering tension)} = Z_t t$$

$$= 37.3 \times 16,714 \text{ lb.}$$

$$= 623,432 \text{ lb. inches.}$$

which agrees closely with first results.

Now on examination of Fig. 10 we find that NA measures practically 7" from the top edge; the polar distance "h" is 66.5 area units; the area of the moment diagram (A_m) = A of triangle o_1o_2m - A of approx. parabola on o_2m .

$$= \frac{19.4 \times 6.2}{2} - \frac{2}{3} \times 9 \times 9$$

$$= 60.14 - 54$$

$$= 54.74 \text{ sq.}''$$

$$\therefore I_{NA} = 2hA_m$$

$$= 2 \times 66.5 \times 54.74$$

$$= 7280 \text{ units}^{(4)} \text{ approx.,}$$

which agrees very well with 7273 obtained by calculation.

It is not suggested that such accuracy is obtainable without great care, but the principle is undoubtedly valuable and worth study and practice on the part of the student of structural work.

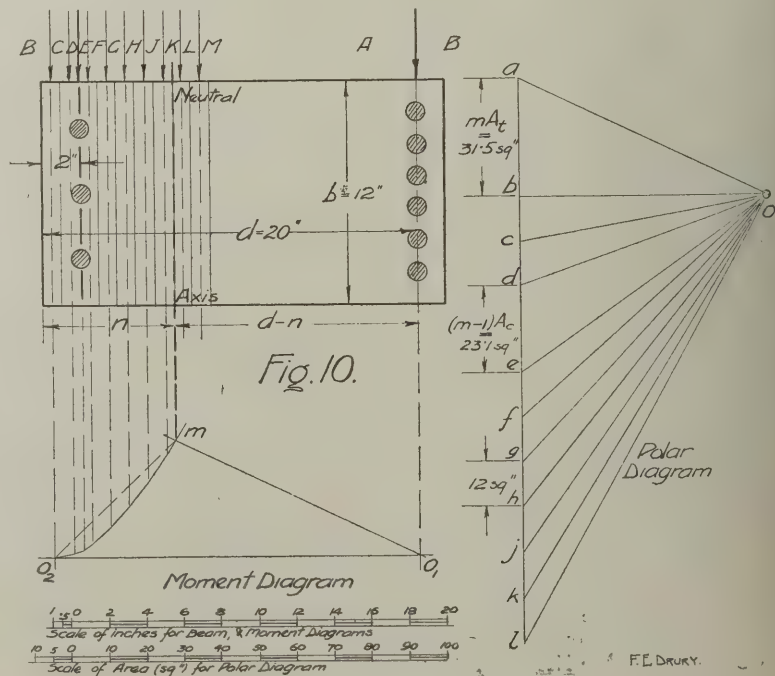


Fig. 10.

Polar Diagram

Moment Diagram

Scale of inches for beam, & moment diagrams
Scale of Area (sq. in.) for Polar Diagram

F.E. DRURY.

STANDARDISING FACTORY CONSTRUCTION.

Standard sizes and standardised details for factory buildings were claimed to make possible not only decreased cost and increased profit, but rapid fabrication and thirty-day delivery of the completed structures, in an address made by H. S. Jacoby, of the Samuel Austin and Son Company, before the students at Cornell University. How this standardisation is accomplished, and the reasons for the selected standard dimensions, are described in the following extracts from Mr. Jacoby's address:

Determining Requirements.

In devising a method to get a larger margin between the actual cost and the selling price, or, in other words, a larger profit, the Samuel Austin and Son Company, industrial engineers, of Cleveland, decided to standardise building construction. This company believes that the time is coming, and coming soon, when a protective owner will sacrifice some of his "pet" ideas if he knows that he can get a building which will answer his purpose and let it within thirty days after the signing of the contract. To this end designs and complete details for seven standard buildings have been drawn up. Furthermore, the fabricated steelwork and other items which are not under direct control are even put into stock. It requires faith, coupled with an optimistic and powerful sales manager, Mr. Jacoby asserted, to have on hand three buildings 100 ft. by 400 ft., two buildings 90 ft. by 300 ft., and one building 200 ft. square before any actual contracts are in sight.

It has taken years of study to arrive at the general dimensions and outlines of buildings which will meet the requirements of a large proportion of manufacturers, engineers, and prospective owners. Often the width of the building is determined by the room permitted by adjacent structures and the size of lot available. But, having adopted a certain unit width, say 100 ft., consisting of two 50-ft. aisles, there is a great advantage in being able to increase the width by further additions of 50-ft. aisles.

Seven Standard Buildings.

Standard 1 is a simple steel I-beam structure of one storey, with 14 ft. clear height and 60 ft. width out to out, and one intermediate row of columns. Standard 2 is a heavy machine-shop or foundry building 90 ft. wide, with three 30-ft. aisles and travelling crane in the centre aisle, with 14 ft. 6 in. clear height to the I-beam

rafters. Standard 3 is a 100-ft. one-storey factory building, with central monitor and a steel roof truss of the Warren type supporting the flat-slope composition or tar-gravel roofing. This is a popular type, and contains but one row of intermediate columns. The clear height of 13 ft. under trusses is ample to allow for most requirements. Hundreds of these 50-ft. roof trusses are carried in stock; the columns are not cut to exact length, but are kept in stock ready to cut on very short notice.

Standard 4 is a saw-tooth-roof factory building. The columns are spaced 20 ft. apart in both directions, making all trusses exactly alike, and the vertical faces are used for the roof sash to give rigidity, and

into three parts for the floorbeams in type 6, or two parts for the rafters in type 1 or 2. Standard 7 is a strictly fire-resistive type of multi-storey reinforced-concrete building, with round columns, flat-slab floors, and the regular brick-and-steel sash walls.

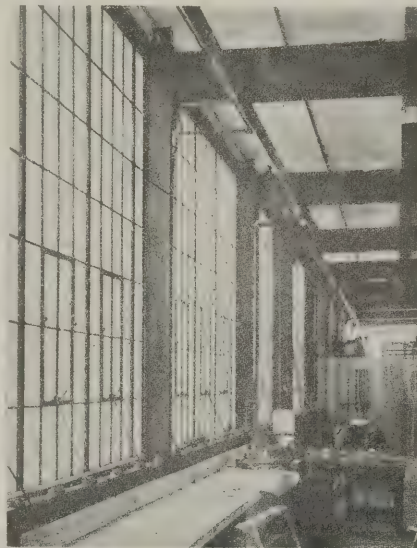
The height of a building is determined by a combination of requirements. Viewed from the outside, a certain sill-height is necessary, and above this sill sufficient glass to insure good illumination. The sill-height may be determined by the height of work-benches, the storage of materials, or the height of pipe coils for heating. An over-abundance of sash means unnecessary expense for heating. Viewed from the inside, the clear headroom varies with the depth of the supporting steelwork, the height of the machinery in the building, the presence of travelling cranes or other special apparatus.

Standard Sizes—20-foot Bays.

In the design of standard buildings capable of being erected in thirty working days, commercial and standard sizes of materials must be strictly adhered to. The structural-steel man passing through the drafting rooms of our colleges and noting the sample drawings on the walls will almost invariably detect timber or steel sections which are uneconomical or not in general use, and consequently hard to obtain. For instance, a $2\frac{1}{2}$ by $2\frac{1}{2}$ by $\frac{1}{2}$ -in. angle may be designated in a roof truss. A 4 by 3 by $\frac{5}{16}$ -in. angle is stronger, weighs less, costs less per pound, and is kept in stock by every steel company.

Why was the bay length of 20 ft. adopted? First of all, there is a great advantage in the use of whole numbers rather than fractions. Why choose 20 ft. when 20-ft. lumber costs more per thousand than 16 or 18-ft. lumber? Simply because a 6 by 12-in. roof purlin, far cheaper than a steel beam with a nailing strip bolted to the top flange, is stressed to its maximum capacity when supporting a panel roof load 8 ft. wide and 20 ft. long. Eight feet is the maximum spacing of roof purlins for 2-in. roof sheathing. These yellow-pine boards are dressed and matched from 2 by 6-in. lumber. To prevent deflection a continuous 2 by 6-in. flat is nailed to the under side of the roof sheathing midway between the purlins.

One more factor, the steel sash, entered into the 20-ft. spacing of roof trusses. We examined the catalogues of various sash manufacturers to get a combination of units which total exactly 16, 18, or 20 ft. The two sizes of glass in most general use are 12 by 18 in. and 14 by 20 in. Of these two the 14 by 20-in. size is the more



STANDARD I. FULL PANEL OF STEEL SASH GIVING MAXIMUM LIGHT.

because less expensive side-wall sash can be used. Standard 5 is a typical forge shop or structural warehouse for use where a heated building is not required. It has sloping corrugated-iron roofing and is 100 ft. wide, with central aisle 40 ft. wide and 34 ft. high for the crane runway.

Standard 6 is a multi-storey mill building with upper tier similar to Standard 1, steel frame and brick walls below the steel sash windows. For this type 16-ft. bays are specified. Since the same load is carried by the floorbeam of this type on a 20-ft. span as by the roof beams of types 1 and 2 on a 30-ft. span, standard 18-in., 55-lb. I-beams are kept in stock and cut



STANDARD VI. FRANTZ-PREMIER BUILDING, CLEVELAND.



STANDARD III. NEWCASTLE CONSTRUCTION CO. FACTORY.

economical. Four units of four lights each are placed from column to column, and the ends measure exactly 20 ft.

There are many advantages in having the steel sash line up at the columns with the structural steelwork. During erection sash has a tendency to creep. In a 400-ft. building the actual out-to-out dimension of sash may exceed the computed dimension by 6 in. When the units line up with some definite mark, as they now do with the columns every 20 ft., the variation of actual from theoretical dimensions is reduced to a minimum.

Standard Structural Details.

The principal feature of the standard truss is that the details are arranged to permit all trusses to be exactly alike. The wind load is taken by a system of bracing in the plane of the upper chord. Open holes in the rafter angles engage the lateral plates for the connection of diagonal rods. The equal spacing of these plates means equal length of rods. The cost of shop work is reduced, likewise the cost of drawing. Erection is simplified, as the erector can pick up any truss and place it between any two columns.

All clip angles which engage the wood purlins are identical. On the main truss there is no evidence of the presence of a monitor truss. In reality the vertical members of the 34-ft. monitor are connected to angles similar to those used for purlin clips. This arrangement permits the use of the standard truss with or without the centre monitor. A star strut composed of two steel angles extends continuously between the tops of all centre columns.

Steel Sash Economical.

When any considerable area of windows is required, wood sash is seldom considered in mill-building construction. Steel sash costs less, is non-combustible, lasts longer, and offers a greater unobstructed lighting surface on account of the thin muntin bars. The present tendency is to give the factory plenty of light, the direct rays of the sun being subdued by ribbed glass, which also keeps the attention of the employees directed to the inside of the building. Today it is cheaper to erect steel sash than to fill the same area with a brick wall. By a special arrangement with manufacturers, steel sash may be shipped to the job ten days after the order is taken.

Excessive Shipping Sizes.

Needless delay and expense are often caused on account of excessive height and length of completed trusses. Even if a member more than 10 ft. high is accepted by a railroad at the shipping point, it is necessary to route the cars to avoid tunnels or bridges where the head room is not ample. For members more than 40 ft. long an idler is necessary, and it is almost impossible to load economically. To ship too much material loose for field riveting is, of course, more expensive than shop work.

In conclusion, said Mr. Jacoby, the near future offers a good opportunity to the young graduate who is thoroughly in touch with the building problem. At the present time many owners have tucked away in their office desks blue prints showing plans of proposed extensions to their plant. Europe is looking to America to supply her demand, which cannot be supplied by the normal capacity of the American factories. With this demand will come the necessity of engineers with sound working knowledge and an unusual amount of common sense.

THE ADHESION OF CONCRETE TO STEEL.

In the early days of reinforced concrete, it was assumed that a plain round rod would develop its ultimate tensile strength before slipping through the concrete, provided it were embedded to a length equal to a certain number of diameters of the rod. This assumption was based on the knowledge that concrete, in setting, contracts round the reinforcing steel to such an extent that the value of the surface adhesion of the concrete to the plain steel was equal to 574 lb. per sq. in. of surface of steel coming in contact with the concrete.

The tests which were made to determine this result, while correct in themselves, are not applicable to the theory of the design of reinforced-concrete beams. These tests were made on bars embedded to different lengths in blocks of concrete, leaving a portion of the bars exposed. A load was applied to the exposed ends of the bars sufficient to pull them out of the concrete, and the different results were tabulated. It can readily be seen that under such conditions of testing when the pull was exerted on the exposed ends of the bars any reduction in area due to the stress in the steel must have taken place in that portion of the bar which was not embedded in the concrete. In practical cases, however, when the reinforcing steel is entirely embedded in the concrete the conditions are different, and the reduction in the area of the reinforcing steel due to the tensile stress occurring in it is sufficient in many instances to separate the steel from the concrete, thus preventing their acting together.

This state of affairs has been recognised of late by practically all reinforced concrete designers who use plain round rods and who now crank up, fishtail, or otherwise deform the ends of the reinforcing bars in order mechanically to transmit the tensile stress into the reinforcing steel. But even such an arrangement does not overcome all the difficulties.

For many years Continental engineers were responsible for the use of plain bars in reinforced concrete work, and employed such reinforcement in practically all their work. During late years, however, there has been a complete "about-face," and those same Continental engineers, as well as the leading engineers in the United States of America, now realise the important rôle which is played by the adhesion of the concrete to the steel embedded in it, and now take into consideration the many uncertainties contingent upon the use of plain bar reinforcement and the conditions which tend to destroy the adhesion between the metal and the concrete.

In 1904, at the International Engineering Congress held at St. Louis, Professor Schule, of Zurich, reported that the cross sectional area of reinforcing bars stressed even within the safe working load might be sufficiently reduced to eliminate in its entirety the surface adhesion of the concrete to the metal in such cases where plain round rods are used as reinforcement. This report, coming from so prominent an authority on reinforced concrete, attracted considerable attention to this subject, and since that time reinforced concrete engineers have given much more study to the question of surface adhesion between concrete and reinforcing steel.

There are, however, other conditions which affect the surface adhesion of concrete to the reinforcing steel. In France it was recently proved both in actual practice and experimentally that the action of

moisture on reinforced concrete structure greatly affected the value of the surface adhesion of the concrete to the steel embedded in it. This state of affairs is of special importance in such structures as reservoirs, water towers, piers, jetties, railway culverts. In "Les Annales des Ponts et Chaussées" for 1902, Breuille published some results of experiments which show that the value of the adhesion of concrete to metal can be reduced by any amount varying between 50 per cent. and 66 per cent. through immersing the reinforced concrete in water for nine months.

Another condition which seriously affects the adhesion of the concrete to the reinforcing steel is that of continued vibrations and shocks caused by usage and loading. There is a case on record where the adhesion of plain bars embedded in concrete was entirely destroyed by vibrations and shocks after a period of eight years usage, resulting in failure of the structure in spite of the fact that the tensile stress in the reinforcement was well within the value which was considered a safe working value.

As a result of the careful investigation of the question of surface adhesion and the conditions which tend to destroy the value of that adhesion, the newest regulations for the design of reinforced concrete issued by Continental municipalities now insist that there shall be a mechanical bonding agency in the reinforcing steel through which the tensile stress can be transmitted from the concrete into the reinforcement. These regulations insist that the mechanical bonding agency shall be distributed throughout the greater length of the reinforcing bars.

There are several forms of mechanical bond reinforcement which are now placed at the disposal of designing engineers. Some of them have their various points of merit, with the result that it is sometimes difficult to choose that form which is most suitable and economical for the particular purpose to which it is to be put. In selecting proper mechanical bond reinforcement there are a few conditions which should be taken into consideration by the designer-engineer. Mechanical bond bars derive their bonding agency through deformation in the bar itself, and it is quite evident that the more positive the deformation, the better the bond between the reinforcement and the concrete. The main reinforcement must, however, in the process of rolling, be in a straight line. In the Kahn Rib bar, which fulfil this condition, the mechanical bond is obtained by thin deep ribs which are spaced at small distances apart at which run round the main tension reinforcement. The use of the Rib bar eliminates to a great extent the necessity for deforming or fishtailing the ends of the reinforcement, and the value of labour saved in smithing is sufficient to pay for the slight extra cost.

Housing and Tuberculosis.

At a meeting of the combined committee of the Insurance Committees for the County of Durham and the Borough of Darlington, at Durham, it was resolved to call the attention of the National Association of Insurance Companies to the deplorable housing conditions from which many tuberculosis cases were taken to sanatoria, and to which they returned at the expiration of their period of treatment and to recommend the association to urge upon the Local Government Board the desirability of taking steps as early as practicable to bring into operation measures in order to remedy the evil.

SOCIETIES AND INSTITUTIONS.

Institute of Royal Architects of Ireland.

At an ordinary meeting of the Council of the Institute of Royal Architects of Ireland, held at 31, South Frederick Street, Dublin, the President (Mr. R. Caulfeild Arpen, B.A., R.H.A.) in the chair, the following resolution was passed: "The Council of this Institute desires to place on record its sense of the great loss the profession of architecture has sustained in the death of Robert Cochrane, I.S.O., LL.D., F.S.A. For thirty-eight years he loyally supported the Institute, first as a member and afterwards as a Fellow; he was a Fellow of the Royal Institute of British Architects. A man of cultivated taste and wide sympathies, he filled with distinction the position of His Majesty's Inspector of Ancient Monuments in Ireland, a position he was specially qualified to occupy owing to his extensive knowledge as an antiquarian and his professional training as an architect. During the period of his office the work of restoration and preservation of the ancient buildings of Ireland was carried out with a sympathy and skill which his fellow-architects widely appreciated." (See note in our Editorial columns of the present issue.)

Liverpool Architectural Society.

The annual meeting of the Liverpool Architectural Society was held on April 17, 1916, at 13, Harrington Street, Mr. E. Percy Hinde presiding. The adopted report of the council for the past year showed that the present membership of the society consisted of 60 Fellows and 46 Associates. There were also 3 Hon. Fellows; 8 Hon. Associates, and 7 Students. Twenty-nine Fellows and Associates, or more than one-

fourth of the members were now serving in either the Navy or the Army, mostly as officers, and two of them had been mentioned in despatches. With reference to town-planning, the council thought that if architecture was to take its proper place it was necessary that an architect should be professionally engaged on each scheme during the early stages of its preparation, and that was a condition which could only be brought about at the instance of the Local Government Board. The following officers were elected: President, E. P. Hinde; vice-presidents, G. Hastwell Grayson and T. T. Rees; hon. secretary, Richard Holt; Fellows, H. M. Appleyard, W. Glen Dobie, T. Edgar Eccles, C. W. Harris, P. C. Thicknesse, A. Thornely, W. E. Willink, J. Woodfall; Associates, L. P. Abercrombie and S. McLaughlan.

Leicester Society of Architects.

At the forty-third annual meeting of the Leicester and Leicestershire Society of Architects the council reported that the total membership had now reached 115. Out of that number twenty-nine members were on active service with the forces. Most of the business dealt with during the past year was connected with the abnormal conditions and difficulties under which the architectural profession is now being carried on. Mr. Charles Kempson, the retiring president, received a vote of thanks for his services during the past year. Mr. J. Woodhouse Simpson was elected president for the coming year. Mr. F. B. Cooper was re-elected hon. treasurer, and Mr. Clement Stretton was re-elected hon. secretary. The following were elected as the council: Messrs. Charles Kempson (past president), W. A. Catlow, W. K. Bedingfield, W. Keay, A. H. Hind, N. B. Robertson, and A. J. Wood.

R.I.B.A.

The annual general meeting of the R.I.B.A. will be held Monday, May 1, 1916, when the chair will be taken at 4.30 p.m. precisely, for the following purposes: To read the minutes of the special general meeting held Monday, March 27, 1916; formally to admit members and licentiates attending for the first time since their election. To consider the annual report of the council for the official year 1915-16.

Professional Conduct.

The Council, at their meeting on Monday, April 3, passed the following resolution: "That the payment by any member or licentiate of the R.I.B.A. of a fee or commission to any person in respect of his good offices in introducing work is unprofessional and on all grounds to be avoided." The Council have ordered this resolution to be added to the Professional Conduct Regulations, published in the "R.I.B.A. Kalendar," p. 70.

Licentiates and the Fellowship.

The next examination of licentiates desiring to qualify for candidature as Fellows will take place in July. Applications for admission must be sent in before the end of May.

Discontinuance of the Preliminary Examination.

The preliminary examination for the registration of candidates as probationers will be discontinued.

Candidates for probationership will for the future be required to submit certain certificates, full particulars of which were given in the Institute "Journal" for March 4, and to be obtained from the secretary, R.I.B.A.



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LATE CONTRACTS, etc.

ROADS & CARTAGE.

April 26.—**PAVING, ETC.** **Fellinging.**—Paving, channelling, sewerage, kerbing, and concreting of Back Streets at the rear of Smokey Row and Sunderland Terrace, Wardley, for the Urban District Council. Particulars from W. P. Parkin, Clerk of the Council, Council Buildings, Felling-on-Tyne.

April 26.—**GRANITE CHIPPINGS.**
Bognor.—Supply of about 100 tons of $\frac{3}{4}$ -in. Leicester or Guernsey granite chippings, for the Urban District Council. Particulars from J. Jubb, Clerk, Council Offices, Bognor.

April 26.—**GRANITE.** **Stowmarket.**—Supply of 200 tons of best broken granite, for the Urban District Council. Particulars from P. C. G. Hayward, Clerk, The Old Bank, Stowmarket.

April 27.—**GRAVEL AND SAND.**
Dublin.—Supply of pit gravel and pit sand,
for the Corporation. Particulars from the
City Engineer, 28, Castle Street. Deposit
1s.

April 28.—**MATERIAL.** **Hardingstone (Northants).**—Supply of about 780 tons of granite of the finest quality and footpath chippings, for the Rural District Council. Particulars from J. R. Phillips, Clerk, 2, St. Giles' Square, Northampton.

May 3.—**GRANITE, ETC. Braintree.**—Supply and delivery at Braintree railway Station of 700 tons of broken granite, for the Urban District Council. Particulars from H. H. Nankivell, Surveyor, Vestry Hall, Braintree.

MISCELLANEOUS.

May 2.—**MATERIALS.** Glasgow
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THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, May 3, 1916.

Volume XLIII. No. 1113.



SHOP FRONT, PULTENEY STREET, BATH.

(From a pencil sketch by Harold Falkner.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

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TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1113.

EDITORIAL.

CORRESPONDENCE on the well-worn subject of Gothic architecture has occupied, during the past few weeks, a good deal of space in the "Observer." One writer having claimed Gothic for the French—it is, he says, "correctly and truly French architecture"—another opposes to this the claim of St. Hugh's Choir of Lincoln Cathedral, which, he contends, "is by general consent the earliest example of pure Gothic in Europe." Then follows the inevitable interpellation "regarding the term 'Gothic,' which most unfortunately has been used with little or no discrimination by many exponents, both lay and professional," Wren being in this respect the chief of sinners. "To him and the so-called revivers of classical architecture in England doubtless it expressed their dictum that the style was one of 'Gothic' barbarity. To others it does not require great acumen to discover that the designation 'Pointed' is a correct definition, but possibly the French term 'Ogival' is better still." Thus Mr. Charles E. Ambler, of St. Thomas's Historical Research Society. He regards the term as "defamatory," but, however that may be, the protest is "too late a week." Besides, the term has, for the general public, no more of original force than has the term "china" as applied to crockery; and, certainly for the majority of persons, it conveys no suspicion of opprobrium. It is convenient because it is generic and comprehensive: whereas "Pointed" and "Ogival" are rather specific. In all such purism there is a sort of frivolous pedantry that is seldom or never taken seriously. If the term "Gothic" was at first used contemptuously, and even if Wren consciously used it in this sense, it has long since passed out of that bad category. Words rise as well as descend in the scale of dignity, and it may be freely granted that "Gothic," having long ago reached its zenith, is in some danger of reverting to its worst significance—of becoming again a term of reproach. But did Wren really employ the term with sinister intention? Britton has it that Wren rather objected to the word: "Sir Christopher Wren was of opinion that what we now vulgarly call Gothic ought properly and truly to be named the Saracenic architecture refined by the Christians." At this time of day, however, it is hardly worth while to discuss the validity of the term "Gothic," which permeates all literature.

* * * * *

What is meant by the reference to Lincoln Cathedral is better expressed in the words of Precentor Venables, who says that great and peculiar interest attaches to the choir and eastern transept "as the earliest dated example of pure Gothic architecture, without any lingering trace of Transitional feeling—the first perfect development of what is known as the Early English style." Freeman, in his "Norman Conquest," is equally positive. "St. Hugh," he declares, "was

strictly the first to design a building in which the pointed arch should be allowed full play, and should be accompanied by an appropriate system of detail." Hugh "did nothing less than develop on the soil of Lindesey the first complete and pure form of the great form of architecture, the architecture of the Gothic arch." Viollet-le-Duc, who had expected to find Lincoln an adaptation from the French, came away from it convinced that "on the exterior the choir of the cathedral is thoroughly English, or Norman if you will," since it shows Norman influence very strong. M. Viollet-le-Duc's odd way of expressing himself detracts nothing from the broad fact; and he adds that "the construction is English, the profiles of the mouldings are English, the ornaments are English, the execution of the English school of workmen of the beginning of the thirteenth century." Yet the architect employed by St. Hugh was Geoffrey de Noyers, who was perhaps merely of foreign descent; or perhaps with a large carelessness that must rejoice the heart of Mr. March Phillipps, he allowed the workmen of the hand. This freedom from direction was pushed to a logical conclusion at the burial of St. Hugh, when, if the rhymed legend is to be credited, "All the bells of merrie Lincoln Without men's hands were rung, And all the books of merrie Lincoln Were read without men's tongue; And ne'er was such a burial Since Adam's days begun." One can well believe the line.

* * * * *

Whether or not Wren thought Gothic barbarous, it was certainly fortunate in being able to keep free from it. How different was the case of Barry. One can hardly look at the Houses of Parliament without feeling that his heart was not in the work. Here was a man who thought in Italian and was compelled to express himself in Gothic. "He chose Perpendicular," we are told by his biographer, "thinking that it would lend itself most easily to the requirements of the building, and to the principle of regularity, which he intended to introduce in his design. But, if he could have had a site to his mind, and had been left free to choose his style, there is little doubt that he would have chosen Italian. The example most frequent in his thoughts was Inigo Jones's grand design for the Palace at Whitehall; his own general ideas were manifested in the great design for the New Public Office, which was the last important work of his life. He actually prepared some sketches and studies for an Italian design, in defiance of the instructions to the competitors. But he felt that, in all the circumstances, Gothic was the style best fitted for the New Palace, and, if Westminster Hall was to be made a feature in the design, the only style possible; and he was consoled for the loss of Italian mainly by the thought of the facility given by Gothic for the erection of towers, the one method by which he thought

possible to redeem from insignificance a great building which convenience forbade great general height, and for which a low and an unfavourable site had been provided." It is difficult to escape the pathos of it; and it must be admitted that Barry made the best of a bad business; but is it not a flagrant instance of genius supplied?

* * * *

Barry, it may be recalled, sketched out the original idea of his plan on the back of a letter, while on a visit to one of his friends, and this rough sketch contained the germ of all that followed. Warned by his friends that he was proposing "to clothe a classical design with Gothic details," he nevertheless adhered to his belief "that symmetry and regularity were essential to unity and grandeur; and on this conviction he acted throughout, though sensible at the time that it would meet with opposition, and occasionally disheartened by the increasing strength of the opposition in after years." Pugin and others advocated irregularity, picturesque, and variety—a group of buildings rather than a single one; but Pugin is said to have admitted that "Barry's grand plan was immeasurably superior to any that I could at that time have produced." Our Belgian friends may like to recall that Barry, in his search for models, inspected the town-halls of Belgium, especially those of Brussels and Bruges. These studies, however, did not affect his design, although they "recurred to him afterwards as examples of visible roofs and general enrichment." It may be claimed, therefore, that our Parliament buildings are peculiarly English—not the less so that they stand in themselves a monument to the English love of compromise which is demonstrated at every session.

* * * *

At the moment when the Royal Academy Exhibition was opening, it would be an injustice to Barry to ignore his influence on the Academy. Having a robust belief in architecture as the most comprehensive of the arts, as well as probably the most powerful in its effect on the material and intellectual progress, he could not bear to think that architecture was suffered rather than encouraged. He felt, also, that there was in England a great want of a more formal and definite architectural education, and he thought that the Academy should meet it. When, in 1856, a committee was appointed to consider how the instruction in the schools of the Royal Academy could be improved, and a sub-committee, consisting of Messrs. Cockerell and Hardwick and Sir Charles Barry was asked to advise on architectural instruction, Barry drew up a rather elaborate scheme, which was rejected on the plea that the Academy had neither the funds nor the accommodation involved in it. A change of Government prevented Barry from being the architect of the Royal Academy buildings, for which his design had been accepted; but Lord Derby's administration ceased, and the scheme was dropped. In 1866, Sydney Pirke, R.A., was commissioned to design the Academy Exhibition rooms, which were completed in 1869. Burlington House, of course, was built by Richard Boyle, Lord Burlington, with the not inconsiderable aid of Colin Campbell, architect.

* * * *

Some Aspects of the Rebuilding of Belgium" is the title of two articles that have appeared in "The New Age," but the second of them is not very closely related to the matter beneath it. In the main, it is a general diatribe, rather in the uncompromising manner of Junius, against "profiteers." "Just consider," says the writer, "what the term 'master-builder' signifies today! It stands for that new class of society which acts as intermediary between the architect and the contractor; and the principal function of this new class consists in controlling the workers and collecting the materials, and thereby extracting another profit on

the cost of commodities—Labour and material. I do not blame these middle-men for thus pursuing the even tenour of their profiteering way—we are all more or less doing likewise at the present time—but I do think that a society which tolerates the present system of building deserves all the inconveniences which arise during either a strike or a lockout." This is mere vapouring, and worse, for it is grossly unjust to the so-called middle-man. It implies that he is a costly excrescence, whereas he is plainly and demonstrably an economic organic growth. Time and again it has been proved up to the hilt that building operations cannot be economically conducted where private or municipal owners have tried the effect of dispensing with the much-abused master-builder.

* * * *

In 1914, during the dispute in the London building trade, the question was raised with reference to an attempt to complete a large contract by direct labour, and we then published a considerable body of authoritative opinion upon the subject. Architects agreed unanimously that "the elimination of a general contractor must increase the responsibilities of everyone concerned, and that the advantages are almost entirely theoretical," and Sir Ernest George wrote that "In works that are tendered for in keen competition, with quantities supplied, the contractor can have but a small margin of profit for the part he plays, while taking all risks." It is not a matter of opinion, but a proved fact, established at an enormous cost to the community in municipal adventures like that of the L.C.C. Works Department—that by the "elimination of the contractor" the building owner loses much more than he saves. To gird at the master-builder as a "profiteer" is to cast an unwarranted aspersion on a man who justifies his existence and his profits by the services he renders in "controlling the workers and collecting materials," to say nothing of other important functions which the writer in "The New Age" finds it convenient to ignore.

* * * *

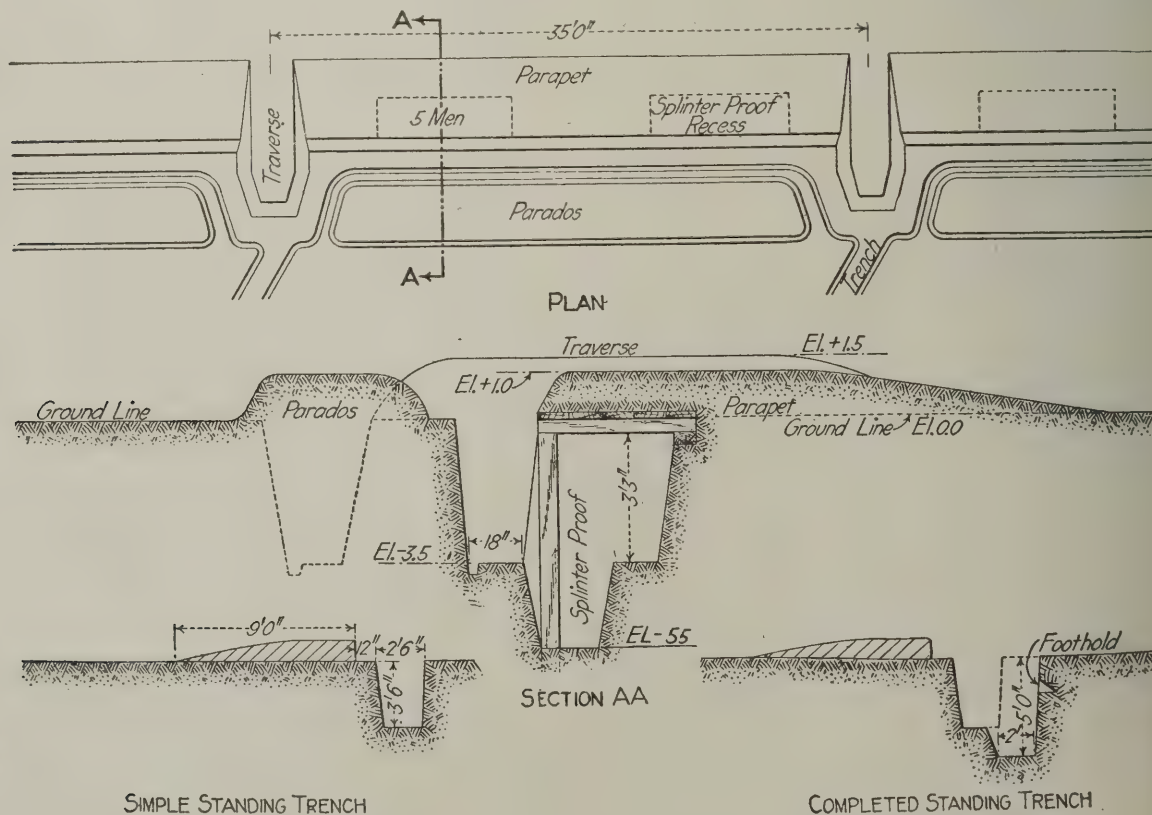
On another point the writer in "The New Age" is equally misleading. With reference to the recent Town-planning Congress, he remarks that "One of the subjects for discussion is the provision by the Government, at the close of the war, of the necessary capital to enable housing schemes to be carried into effect. In other words, it simply means that the nation is to be asked to advance capital at a cheap rate, so that the building-profiteers may continue in Business-as-Usual." This is mere perversity. If the writer can see nothing else in the request than what he says it "simply means," he must be in the parlous condition of Old Gobbo—"high gravel blind." There are indeed none so blind as those who won't see. Let it be granted that the Congress was actuated by a two-fold object—to prevent the unmerited ruin of builders through the operation of abnormal financial conditions, and at the same time to supply a practical solution of the housing problem—then surely "The New Age" writer, in his craze for elimination, has left out the more important consideration, has disingenuously ignored the vital principle of the resolution. In effect, the Congress, recognising the immense importance of the services rendered to housing by the private builder, is strongly desirous that his good work for the community shall not cease, and is naturally solicitous that it shall not be rewarded by depriving him of his means of livelihood. That is the plain truth of the matter so far as we can see; but to see it steadily and see it whole would have robbed "The New Age" writer of most of his padding for the article so quaintly headed "Some Aspects of the Rebuilding of Belgium," and his passion for elimination incontinently drew the line at this sacrifice.

HERE AND THERE.

ARCHITECTURE has nothing to do with War trenches, but architects have, as plenty of them have occasion to remember; so a little more about "dug-outs" and trench construction as used by British troops may well be given here by way of comment on the accompanying illustration (passed by the Press Bureau). I was in the trenches the other day, and though instead of the scream of shells there was the roar of motor traffic—for these trenches were not in Flanders, but in Knightsbridge—I gained a very intimate glimpse of what life must be like in these confined burrowings in the earth, with their little recesses for human beings and bombs and grenades, their bottom planking, timber sheeting, and sand-bag and earth parapets, their platforms for machine guns and catapults, and apertures for rifle barrels. Ten minutes in all this clamminess of Knightsbridge was enough. It sufficed to make one realise very acutely what the soldier in the firing line has to suffer. Years ago Bloch is supposed to have told us all what would inevitably happen, but only those who have actually experienced trench warfare can really know what it means. It is apparently a very old tale. I am not competent to write on matters military, but here is one who is, and who tells me that "even under Marlborough much of the very earth which is now sheltering our soldiers from the deadly nickel-sheathed bullet of the Mauser served to protect the men from the heavy leaden ball of the flint-lock," while we know the hand grenade to be an old acquaintance of the English soldier, "though not precisely in the form in which it is now used, for the increased power of explosives has permitted it to be made in a lighter and more portable shape than that of the heavy iron balls which were used in both sea and land warfare during the seventeenth century." But machine guns that can send out a stream of bullets at the rate of six hundred a minute; barbed wire entanglements, sometimes charged with death-shocks of electricity; high-explosive shells that shatter all obstacles, shells that

throw off fumes that make men temporarily blind; shells that dig craters big enough to swallow a horse and cart; and, last of all, gas clouds and their corrective, gas masks—these are very different modern devices.

The men in these trenches do not talk about War; they talk rather of "Blighty," which seems to be the trench name for "Home," with adjectival inflections about the personal attributes of the Hun. An officer friend in France gives me a very full specimen of "just a free and easy conversation in the trenches with a 'regular,' from which I extract the following: "You up for a look round? Well, good luck to you. Ain't wot yer might call 'ealthy jest round about 'ere salient. 'Bout the rottenest part we've struck yet. Dug-outs ain't up ter much neither. Yer can't do anythin' in the daytime else yer askin' for it, an' wot we puts up in the night gets bashed in the day. All yer can do is jest stick it, an' it takes so much stickin', too, when them blighters takes it into their heads to chuck a bit o' old Krupp about. . . . I ain't seed a paper fer some time now, not that I want to neither. Makes yer fair sick to read about the tribunals. I read one w'ere a bloke sed his sister was attacked he'd pray. Fat lot o' good that do anyway. He'd be no good in the Army. It wudn't Gawd 'elp England if them conscientious objectors could stop all the reinforcements they can send us. . . . it's bin quiet like this last tour fer us, nothin' doing. No, not many 'casualties, jest a patrol or two fired on, but no scrapping. . . . Leave? Ee, months since I last went, but it's jest getting round the turn agen. Don't 'arf put yer off yer grub when ye knows yer down to go next. Makes yer think even—thing wot comes over's goin' to put yer out o' n' 'afore yer goes. But o' course it don't much matter yer jest come back off leave, but jest 'afore yer goes orful if they starts ter bombard. . . . Well! I hope yer gets to Blighty orlright. So long. Mind there's a bit round the corner. They'll cop yer there if yer don't keep yer napper down." UBIQUE



TYPICAL FORMS OF TRENCH CONSTRUCTION USED BY BRITISH TROOPS.



Photo : London County Council.

DOORS AND DOORCASES. II.—AT HAREWOOD HOUSE, HANOVER SQUARE, LONDON.

ROBERT ADAM, ARCHITECT.



SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.). XXXIII.—HALNAKER LODGE; COLDHARBOUR LANE, BRIXTON, LONDON, S.W.



DETAILS OF CRAFTSMANSHIP (SERIES II.) VIII.—CARVING ON SCREEN IN MEMORIAL HALL, ETON.

LAURENCE K. HALL, F.R.I.B.A., AND SIDNEY K. GREENSLADE, A.R.I.B.A., ARCHITECTS.



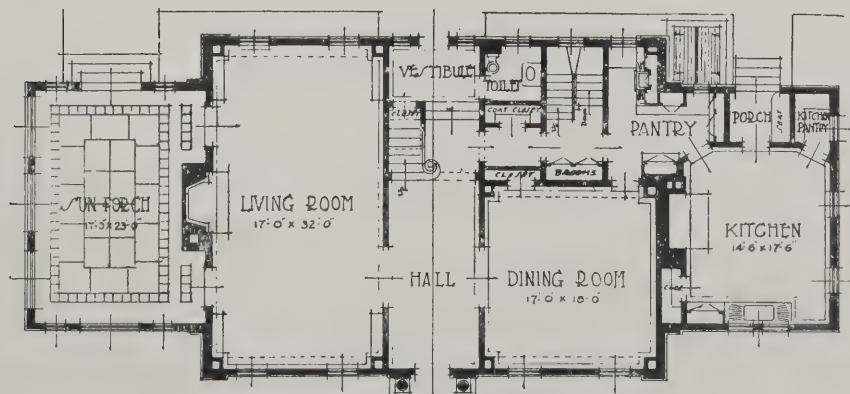
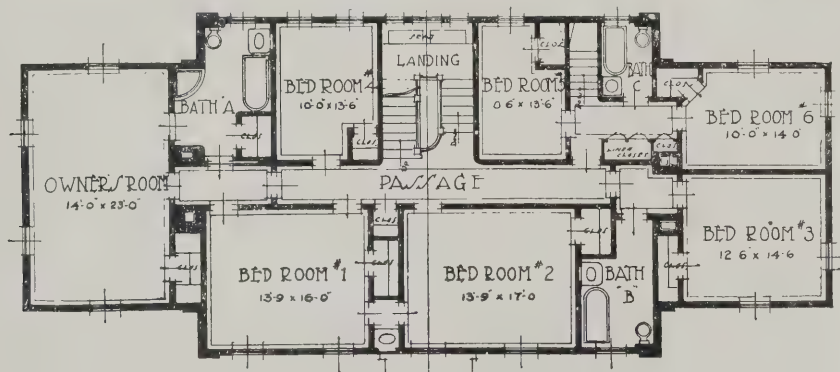
Photo : Thomas Lewis, Ltd.

MODERN DOMESTIC ARCHITECTURE (SERIES II.). XXXIII.—ENTRANCE GATES, NEWTON ST. LOE, BRISTOL.
HENRY WILLIAMS, ARCHITECT.



Photo : Thomas Lewis, Ltd.

MODERN DOMESTIC ARCHITECTURE (SERIES II.). XXXIV.—CRESTING TO ENTRANCE GATES, NEWTON ST. LOE, BRISTOL.
HENRY WILLIAMS, ARCHITECT.

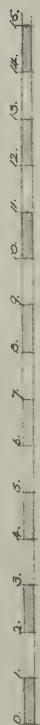


MODERN AMERICAN ARCHITECTURE. XLV.—HOUSE AT SOUTH ORANGE, N.J.
DAVIS, McGRATH AND KIESSLING, ARCHITECTS.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

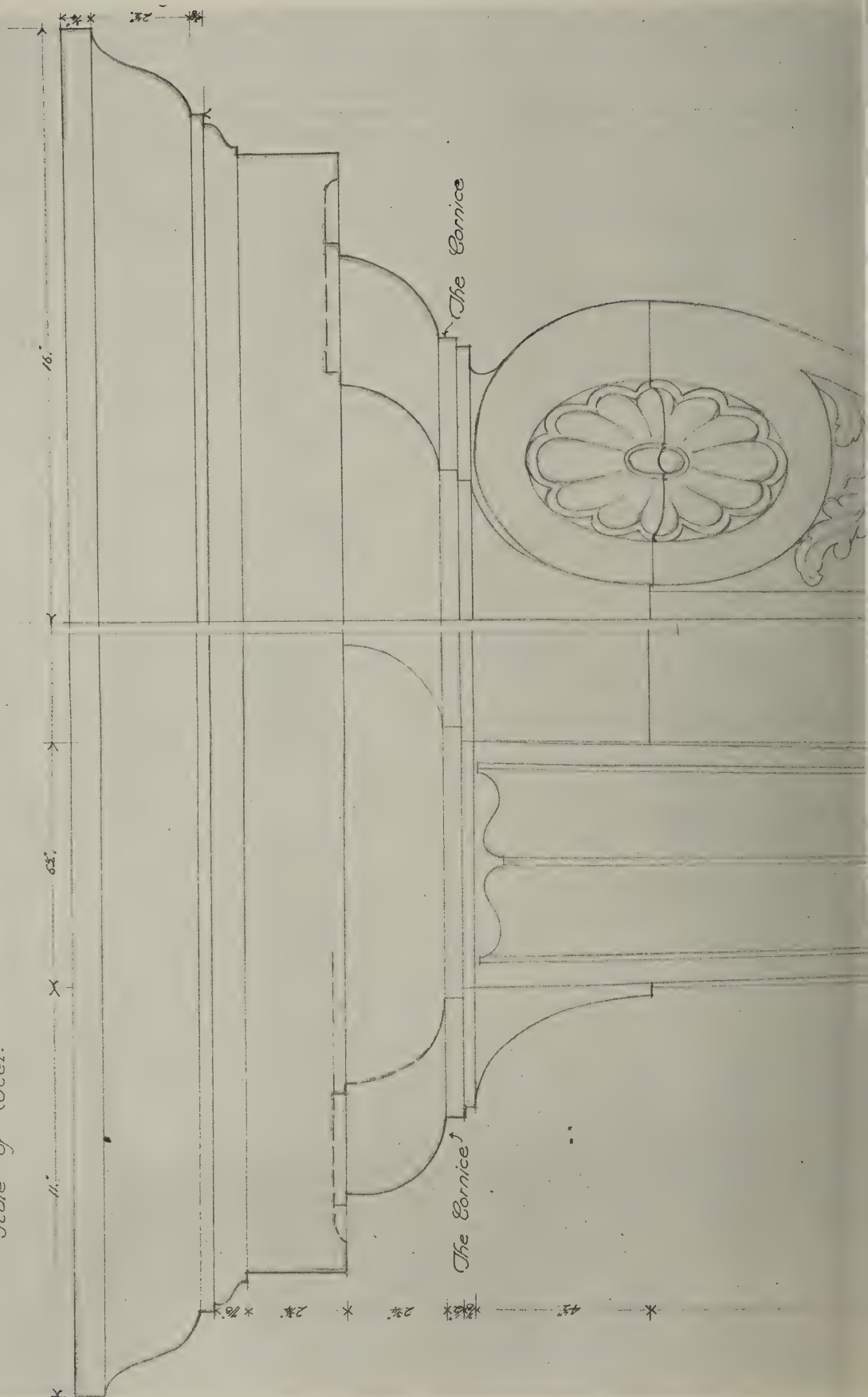
Free Trade Hall. Manchester.

Internal Details to the Lesser Hall.



Scale of Feet:

Detail of Cornice & Bracket
to Main Entrance Door.



Detail shewing the
Front Portion of
Bracket also Cornice →

← Detail shewing the
Side Portion of the
Bracket.

Measured & Drawn
on the Spot: Oct 1918.

STUDENTS' DRAWINGS (SERIES II.). XXII.—FREE TRADE HALL, MANCHESTER: BRACKET AND CORNICE IN SMALL HALL.

MEASURED AND DRAWN BY GORDON HEMM.

Library
OF THE
UNIVERSITY OF ILLINOIS

ARCHITECTURE AT THE ROYAL ACADEMY.

IN this time of War it seems strange that there should be any such feature of Peace days as the Royal Academy Exhibition, but it is all there very much as usual, and the Architectural Room is still the quiet haven to which the jaded visitor may retire from the squash and hubbub of the picture galleries. But in the little corner room the familiar eye will at once recognise that there are decidedly fewer frames, with strange margins of wall space around them. Many of the exhibitors whose work we were accustomed to see year after year in the Architectural Room have had soldier's work to do instead, and among those who remain many have had neither the occasion nor the heart to trouble themselves with the Academy. So it would not be fair to regard this exhibition as in any way representative of English architecture, and the critic's most kindly policy is just to walk around and mark the things that attract his notice. There are Mr. Robert Atkinson's fine drawings of his Bath improvement scheme (illustrated recently in this Journal), and Mr. Thomas H. Mawson shows his elaborate town-planning scheme for Athens. In the same category, too, is Mr. Barry Parker's large model for a town-planning scheme for Oporto. Three very delightful sketches are shown of the new King's College for Women at Kensington, by Messrs. H. Percy Adams and Charles Holden, and Mr. Richard J. Allison exhibits two vigorous drawings by Mr. Palmerston of new British Legations for Cetinje and Stockholm. Messrs. Smith and Brewer have produced a very striking design for Heal and Son's new premises in Tottenham Court Road; Mr. H. Austen Hall shows his new Board Room for the Metropolitan Water Board; and among other designs of outstanding interest are the Midland Agricultural College, by Messrs. Everard, Son and Pick; the new Government offices in the Strand for the Dominion of New Zealand, by Messrs. Crickmay and Sons; business premises in Old Bond Street by Messrs. Norman and Trehearne; the new Cunard building at Liverpool, by Messrs. Villink and Thicknesse; and the Lord Mayor Treloar's Cripples' Hospital and College, by Mr. Leonard Stokes.

Mr. W. D. Caröe exhibits his University College of South Wales and Monmouthshire, in Cathays Park, Cardiff; Mr. William A. Pite his King's College Hospital at Denmark Hill; Mr. D. Barclay Niven and Mr. T. Raffles Davison their design for the improvement of Charing Cross; Sir Ernest George his recent additions to the Crematorium at Golder's Green; Sir Aston Webb and Sons their extensions to the Royal Naval College at Dartmouth, and one section and the wall of the Whiteley Homes; Mr. Reginald Blomfield his memorial slab to the late Sir Lawrence Alma-Tadema.

There is a considerable proportion of domestic work, chief among which are houses by Mr. Ernest Newton, Messrs. Unsworth and Triggs, Mr. H. Reginald Poulter, Mr. M. H. Baillie Scott, and Mr. Sidney J. Hatchell.

Among the church work is Mr. Anning Bell's design for the mosaic filling of the tympanum of Westminster Cathedral; St. Osmund's Church at Parkstone, by Messrs. E. S. Prior and Arthur Grove; and St. Luke's Church, Walsall, and St. Mary's Sculcoates, Hull, by Mr. Temple Moore.

The absence of War memorials is surprising—there are practically none, excepting stained-glass windows; but undoubtedly in the future, for several years, there will be designs for a very large number of these, both national and private memorials.

THE PLATES.

Doorway, Harewood House, London.

THIS large doorway, between the two drawing-rooms on the first floor of Harewood House (now demolished), displays Robert Adam's skill in reducing correct classical features to suit the scale of his general interior scheme. This refinement of detail, while not detracting from the architectural dignity of the several features, yet brings the decorative work into closer harmony with the furniture of the room; it might, indeed, be disparagingly called cabinetmaker's architecture, were it not that it never loses a sense of structural proportion, and its closer approach to the character of the furniture is even a real advantage. The same thing can be observed in Adam's chimney-pieces.

Halnaker Lodge, Brixton.

Delicacy and simplicity are the features of this house, though the general composition, comprising a central block with side wings, is admirable, and the semicircular portico, with verandah above, is an arresting feature. The delicate character of the ironwork in the balustrade, and in the two supports for the hood of the verandah, is typical of the best work of the early nineteenth century, and the tall windows on the ground floor also are very characteristic in the arrangement of their panes. The whole design is refined, and stands in strange contrast to the motley collection of modern houses in its vicinity. The front is stuccoed, finished white, and the pillars of the porch are painted.

Carving in Eton Memorial Hall.

The new building adjoining Eton College, designed by Messrs. Laurence K. Hall and Sidney K. Greenslade, was erected as a memorial to those Etonians who took part in the South African War. It comprises a large oblong hall and an octagonal library. The hall is entered through a crush hall, and at this end has a screen with gallery over. The plate shows a detail of the carving on this screen, which was erected to the memory of Miss Jane Evans, whose portrait by Sargent hangs on it. The screen is of oak, the doors being covered with acid-free ox hide well padded and secured to the frame by square and circular-headed bronze nails.

Entrance Gates, Newton St. Loe, Bristol.

Newton Park, Newton St. Loe, is the seat of Earl Temple. The new entrance gates, designed by Mr. Henry Williams, architect, of Bristol, were made by Messrs. Gardiner, Sons and Co., Ltd., of Bristol. The scrolls and leafwork are of beaten iron, and the coat-of-arms is of repoussé bronze.

An American Country House.

The exterior of this house at South Orange is a modern rendering of the Colonial architecture of the United States, though it lacks those niceties of refinement which distinguished the old work; the tops of the dormers, for instance, are inelegant, and the treatment of the pilaster panels between the end windows on the ground floor have rather a bizarre look. The plan of the house is interesting. It will be seen that there is a central staircase hall, having on one side the dining-room, with kitchen offices adjoining, and on the other a very large living-room opening out into a sun-porch. Upstairs there are seven bedrooms and three bathrooms, the bedrooms being all of a good size and shape.

Bracket in Free Trade Hall, Manchester.

This is the last of our series of illustrations of the Free Trade Hall, Manchester, from drawings by Mr. Gordon Hemm. The bracket is of good outline and its ornamentation is well contrived.

LEGAL.

Engineer's Action against Builders.*Elliott v. C. P. Roberts and Co., Limited.*

April 19. Court of Appeal. Before Lords Justices Swinfen Eady, Pickford, and Bankes.

In this case the plaintiff, Mr. Sidney Elliott, a hot water engineer and fitter, of Stepney, E., appealed from a judgment of Mr. Justice Lush in favour of the defendants, Messrs. C. P. Roberts and Co., Limited, builders, of Tysson Street, Dalston Lane.

The plaintiff brought an action to recover damages for personal injuries sustained by him owing to the alleged negligence of defendants or their servants.

It appeared that the defendants had entered into an agreement with the L.C.C. to rebuild a school in Bethnal Green. Under the terms of the contract the defendants were to provide the necessary plant, etc., and to afford facilities for other tradesmen employed by the L.C.C., including the reasonable use of the scaffolding. Defendants had control of the premises and plant. On December 21, 1914, plaintiff, whilst lawfully engaged on the building (though he did not allege that he was employed by the defendants or made any contract with them), when walking across a gangway which consisted of two planks placed diagonally across an open space, not fixed on either side and having no fence or railing, fell, the boards falling with him, with the result that he sustained serious injuries and afterwards became paralysed. The gangway in question had been safely used by workmen for three months, and the plaintiff, prior to the accident, had used it for six weeks.

Defendants denied liability, alleging that there had been no negligence by them or their servants and agents. At the trial the jury returned a verdict for the plaintiff, assessing the damages at £2,000; but Mr. Justice Lush, after hearing arguments, entered judgment for the defendants, with costs. His lordship said, although it was true that the defendants had agreed with the L.C.C. to allow other tradesmen to use the gangway, he did not see how a stranger to a contract could take advantage of it. If the defendants refused to permit the use of the gangway they would be exposed to a claim from the L.C.C. and to no one else. His lordship came to the conclusion that, the plaintiff being a bare licensee, he could not succeed unless he could prove that the defendants were under a duty under a contract to provide safety. He held, therefore, that there was no breach of duty on the part of the defendants, and entered judgment as before stated. From this decision the plaintiff now appealed, upon the ground that the learned judge should have entered judgment in accordance with the verdict.

Defendants also entered a cross appeal, asking that in the event of the plaintiff succeeding there should be a new trial granted, upon the grounds that the verdict of the jury was against the weight of the evidence and that the damages awarded the plaintiff were excessive.

Mr. J. W. Moyses appeared for the appellant (the plaintiff), and Mr. McCall, K.C., and Mr. Craig Henderson for the respondents (the defendants).

The Court, after hearing the legal arguments, held that the plaintiffs, having regard to the provisions in the contract between the defendants and the London County Council, was in the position of being an invitee of defendants to use the gangway in question. Having regard to

Mr. Justice Lush's summing up and direction to the jury on the issue of negligence, it was impossible to allow the plaintiff to retain the verdict or to give judgment against him. It was necessary, therefore, to order a new trial or action, the costs to abide the result of the new trial.

New trial ordered accordingly.

BOOK NOTICES.

Electric Wiring Rules.

The seventh edition of the "Wiring Rules of the Institution of Electrical Engineers" is revised up to March, 1916, and includes the Board of Trade regulations and the Home Office regulations for factories and workshops. This pamphlet, which is published, price sixpence (post free, sevenpence), by Messrs. E. and F. N. Spon, 57, Haymarket, London, S.W., and may be had at the offices of the Institution of Electrical Engineers, Victoria Embankment, W.C., may be regarded as indispensable to all who are in any way interested in electric wiring. It is furnished with a good index.

"The People's Housing."

Under this title, Mr. A. W. Shelton, F.A.I., has issued as a pamphlet, which is now in its third edition, a report which was specially prepared by him at the request of the National Housing and Town Planning Council for consideration by a conference held at Oxford in July, 1914. It is reprinted by request from the sixty-fifth quarterly report of the General Federation of Trade Unions, and refers mainly to the effect of the Finance (1909-10) Act, 1910, on the building of cottages, and its conclusion is that "except by the whole of the necessary housing being undertaken by the State or by local authorities, at uneconomic rates—a most pernicious and undesirable policy considered as a whole," says Mr. Shelton—there is no way out of the existing deadlock except amending legislation or enormously increased rents. At the present moment, when the house famine has become acute, the reissue of the pamphlet is most opportune.

SAFEGUARDING ST. PAUL'S.

Canon Alexander, speaking at a meeting held at the Chapter House in St. Paul's Church Yard, referred to the appeal for £70,000 which had been made for the preservation of St. Paul's Cathedral. He still wanted £35,000, he said. The money was being spent on the fabric of the cathedral only, because they did not yet quite know how to deal with the difficult question of the foundations. In a building possessing such a delicately poised dome the structure must be strengthened before the soil was touched, or the whole thing might come down. He was surprised that excavations should have been allowed for various purposes so near the Cathedral, for they threatened the foundations.

The Canon described the repair work which is being and will have to be done, including the strengthening of the buttresses and piers supporting the dome, which weighs about 45,000 tons.

"The critical part of the work in connection with securing the safety of the dome will be finished in a few weeks," the Canon announced, "but the whole work will last from ten to fifteen years." The Canon also mentioned that St. Paul's was now for the first time adequately equipped to meet an outbreak of fire.

ARCHITECTS AND THE WAR.

The Royal Institute of British Architects have issued the following additions to the "Record of Honour"—the twenty-seventh list:

Killed in Action.

Baxter, Arthur Craven (of Guiseley, Leeds), of the 4th London Field Company R.E. Recently reported killed in the trenches on the Western front.

Mr. Baxter served his articles with Mr. A. Marshall, of Otley. He joined R.A.M.C. on the outbreak of war, and subsequently transferred to the Royal Engineers.

Died of Wounds.

Hardman, Adrian T. [Student], Lieutenant, Royal Fusiliers. Officially reported died of wounds on March 29. Aged twenty-five.

Lieutenant Hardman was the only son of Mr. T. and Mrs. E. L. Hardman, of Eastcote, Northaw, Potter's Bar. He was educated at Christ's Hospital, and studied for his profession in the Architectural Association Schools, where he carried off the Fourth Year Travelling Studentship. He served his articles with Mr. Frederick R. Farrow [F.], and was afterwards with Messrs. Ernest George and Yeates. He then went to Paris, where he held a good appointment, and was studying for the Ecole des Beaux-Arts when war broke out. Joining the Inns of Court O.T.C., he was granted a commission in the Royal Fusiliers in February, 1915, and was appointed bomb instructor. He was promoted to Lieutenant in February last and went to the front.

Harvey, Charles Cleveland, Lieutenant Argyl and Sutherland Highlanders. Died of wounds. Aged thirty-four.

Lieutenant Harvey was an assistant in the office of Sir John Burnet, LL.D., R.S.A. [F.]. He was well known in antiquarian circles in Glasgow, was interested in heraldry, and wrote a book on the St. Andrew's Cross as the national arms of Scotland. He had also been engaged in compiling a calendar of Yester MSS.

Peters, Kershaw, Sapper, Royal Engineers. Died of wounds in France on February 18. Aged thirty-four.

Mr. Kershaw Peters, of Galway, served his articles with Messrs. Gregg and Detmar, of London. He was afterwards assistant in the Public Works Department, Transvaal, and later assistant with Messrs. Henderson and Pollard, of Auckland, N.Z. Returning to Europe he was appointed instructor in building construction at the Galway Technical School, at the same time entering University College to study for an engineering degree. He passed his first examination with honours, and was pursuing his further studies with equal success when war broke out. Although he had a young wife and child he volunteered for service, and joined the Colours in 1914.

Missing.

Sturgeon, R. V. [Associate], Corporal, 17th Manchester Regiment. Missing since March 10, in France; thought to have been captured while on night patrol work.

Awarded Croix de Guerre.

Groves, Christopher [Associate], serving in the French Army as Commandant, Convois Automobiles, S.S.A. No. 5.

Serving with the Forces.

The following is the twenty-seventh list of Members, Licentiatees, and Students R.I.B.A. serving with the Forces, the total to date being 57 Fellows, 426 Associates, 229 Licentiatees, and 272 Students:

Greene, W. Howe, Capt., 2/1 New-
foundland Regiment.

Gaunt, Edward L., 33rd Sanitary Section R.A.M.C.
Groves, Christopher, Commandant, Convois Automobiles, in the French Army.
Muir, R. G., R.N.A.S.

Beveridge, D. A., Artists' Rifles.
Cormack, J. N., Major, Director of
Works, Protectorate of S.W. Africa.
Hunter, J. P., R.A.M.C.
Pollard, Ernest A., Major, 5th Bn. West
Yorks Regiment (son of Mr. Arthur Pol-
lard [F.], of York).

(Mr. Arthur Pollard's name was given in the last list in mistake for that of his son, Major Ernest Pollard [Licentiate]).

Lawson, Edwin M., 3rd Writer, 6 A.A.,
R.N.

Major V. A. Flower [Licentiate], 13th London Regiment, has been promoted to Lieutenant-Colonel.

Mr. J. N. Cormack [Licentiate], who received his commission as Captain in the South African Engineering Corps in December, 1914, has been all through the South-West Africa Campaign, and on the country being wrested from the Germans and made a British Protectorate he was promoted Major and appointed Director of Works for the Protectorate.

Lieut. J. Lockwood Hall [Licentiate], of the South African Engineering Corps, has been promoted Captain, and is on service in the Protectorate of South-West Africa.

Sergeant H. W. Mann [A.], of the Essex Yeomanry, who was wounded at Hooge, has been gazetted Lieutenant in the 188th Brigade, Royal Field Artillery.

Mr. E. G. Stevenson [Licentiate] has been promoted to Lieutenant, Staff for R. E. Services, and retains his position as Assistant Div. Officer R.E. Canterbury, his commission being antedated to May, 1915.

In connection with their new factory at Toronto, the Canada Metal Company have just erected a shot tower, shown by the illustration on this page. The tower is 160 ft. high, 12 ft. square, and closed in with a corrugated iron sheathing. On account of the limited foundation space, the tower was built square and kept uniform throughout, rather than given a larger base with a tapering design. This necessitated the use of heavier members, especially in the bottom panels. The tower is built in a corner of the factory and is accessible from the different floors. This fact eliminated bracing in the lower panels on the side as high as the factory roof. To overcome any danger from failure, the columns were built heavy enough to ensure a large factor of safety. To meet these several conditions the column members, as high as the factory roof, were each built of four 6 in. by 6 in. by $\frac{3}{8}$ in. angles plated together, with star connection. Beyond this, two angles riveted back to back were used.

To meet the heavy overturning effect, the foundation for the shot tower, which was built simultaneously with the factory foundation, was made fairly massive, and to distribute the load under each pedestal over as large an area as possible a con-

On the top floor (see section C-D) are placed the melting-pot and screens, with sufficient floor space for workmen, and around the tower is built a three-foot bal-

cony. Material is raised by means of an elevator, approximately 3 ft. by 4 ft., operated by machinery placed just to the north of the shot tower. Stairs also lead to the top floor. The shot metal is melted and poured through screens, and the shot is caught in a tank of water at the bottom. The liquid streams, in dropping through space, form into spherical globules, and are hardened when they hit the water.



SOCIETIES AND INSTITUTIONS.

Surveyors' Institution.

"The Principles and Position of Town Planning" was the subject of a paper read at a meeting of the Surveyors' Institution, London, by Mr. W. R. Davidge, F.S.I. In the course of this the speaker said that some apology is, perhaps, necessary for the discussion of such a subject as town planning at the present time, and with many of them the first impression would be to say, "Let town planning rest; get on with the war." It was, indeed, impossible to do much while this devastating war lasted, but there would, undoubtedly, on the termination of the war, be an unprecedented demand for work. This demand would have to be met and met rapidly. It was essential, therefore, for plans to be ready for such time as they can be carried out, and such plans must be the result of careful thinking and a right understanding of the problems to be faced. For a couple of years very few houses have been erected, and even with a diminished civil population there is already very serious congestion, so that in housing alone there is practically certain to come a period of activity unprecedented for many a long year. Already, too, they had evidence in the report of the Departmental Committee on Land Settlement for Sailors and Soldiers that after the war there would arise a need for the planning of village communities in all directions, and this was but one phase of the many activities which would come into being on the cessation of hostilities. There was every need, therefore, to use this period of quiescence in careful investigation and preparation for the near future.

Glasgow Institute of Architects.

The annual general meeting of the Glasgow Institute of Architects was held recently in the rooms, 39, Elmbank Crescent, Glasgow, Mr. John Watson, F.R.I.B.A., president, in the chair. The Secretary (Mr. C. J. MacLean) submitted the report of the council, from which it appeared that the membership now stands at 108 Fellows, 72 Associate Members, and 45 Lay and Student Members. Details were given of the various subjects that had engaged attention during the year. The report and financial statement were adopted. In view of circumstances arising out of the war the council was re-elected for another year, and as several members of council are on service it was remitted to the council to co-opt four additional members.

Aberdeen Society of Architects.

The eighteenth annual general meeting of the Aberdeen Society of Architects was held in the rooms of the Northern Arts Club to receive the report of the Council for the year and for the election of office-bearers. Mr. A. H. L. Mackinnon, president, occupied the chair and was supported by a number of members of the Council. In moving the adoption of the report the chairman referred to the new mode of measurement of carpenter and joiner work for Scotland recently completed and to the new general conditions of contract also recently agreed on for Scotland. He further referred to the new mode of measurement for mason work which had been under consideration for some time and which was now nearing completion. During the year the Society had lost one member by death—Mr. W. D. Ironside—who had acted as a member of the Council on several occasions and was one of the original members of the Society

at its formation in 1897. At the request of the Royal Institute of British Architects the Society had agreed to deal with applications from within its province for admission to any of H.M. Forces, and the secretary had forwarded several of these to headquarters. The Council resolved to discontinue the drawing and design competitions usually conducted in consequence of so many pupils being absent on military duty. The statement of accounts was then submitted and showed a satisfactory balance at the close of the year. The meeting then proceeded to the election of office-bearers and Council for the ensuing year, when the following were nominated: President, Mr. H. MacLennan; vice-president, Mr. G. Watt; hon. secretary, Mr. R. G. Wilson, jun.; hon. treasurer, Mr. G. B. Mitchell; ordinary members of Council, Messrs. W. J. Devlin, C. George, A. H. L. Mackinnon, J. R. McMillan, and J. Rust.

Nottingham and Derby Architectural Society.

At the fifty-third annual meeting of this Society, the president (Mr. Harry Gill) occupying the chair, the Council reported that one member and one associate member had been elected, and to Mr. Valentin Vaerwyck, a Belgian architect of note, at present residing in Nottingham, honorary membership had been granted until peace is declared. The death of one member, the resignation of two honorary members and four members, and the exclusion of one associate had left a total membership of 116, a decrease of eight. A suitable greeting in the name of the Society had been sent at Christmas time to the twenty-six members serving their King and country. Although the profession had suffered more than any other in consequence of the war, no case of absolute distress had been brought before the Emergency Committee of the Society. The hon. secretary had assisted the R.I.B.A. War Committee, but for some reason the results had not been commensurate with the time and trouble involved. The Royal Institute now urged all architects suffering from the affects of war to take up munition work and several had already qualified. The members over military age were asked by the local Parliamentary Recruiting Committee to canvass under Lord Derby's scheme and several members gladly gave their services. No summer excursion was held, but four visits to works proved interesting and instructive. Four sessional meetings were held, at which useful papers were read and discussed. Notwithstanding the decreased membership the funds of the Society showed a satisfactory balance, and it was unanimously decided to send a donation of three guineas to the Architects' Benevolent Fund and invest £15 in the War Loan. Mr. Spencer, hon. librarian, reported that several members had contributed books to the library, and Mr. Hendy, who was now on active service, had lent the whole of his books until the war is over. A motion "that the rules as to election of officers be suspended and the present officers continue until April, 1917," was unanimously agreed to.

The vice-president, Mr. H. G. Watkins, F.R.I.B.A., then delivered a lecture on "Lincoln City and Cathedral" before a large audience, which included lady friends and the students of the School of Art, who had been specially invited. Mr. Watkins, who is a Lincoln man, then gave an interesting description of his native city. He first described and

illustrated with lantern views the supposed position and arrangement of the city in the time of the Romans, and then described its progress and alterations in Norman and later periods up to the present time. Views of the principal historical buildings and remains of old Lincoln were shown, and a concise history and development of the Cathedral, usually called "The Minster," was given. A number of slides of the interior and exterior were put on the screen and even the history of the Lincoln imp and his photograph were included. At the close Mr. Valentine Vaerwyck, a Belgian architect at present resident in Nottingham, proposed a vote of thanks to the lecturer, which Mr. C. B. Sherwin, a former hon. secretary of the Derby Society, seconded.

Liverpool Architectural Society.

The Liverpool Architectural Society held its annual meeting on April 17, at the resumption of the sixty-eighth session. The report showed a membership of 106, and that twenty-nine members and Associates, or rather more than one-fourth, had joined the forces—generally with commissioned rank. In regard to the Town-Planning Act, the council stated that if architecture is to take its proper place in regard to town-planning, it is necessary that an architect should be professionally engaged on every scheme during the early stages of its preparation, and this is a condition which can only be brought about at the instance of the Local Government Board. Officers were elected as follows: President, Mr. E. Percy Hinde; vice-presidents, Mr. G. Hastwell Grayson and Mr. T. Taliesen Rees; hon. secretary, Mr. Richard Holt; unofficial members of the council, Messrs. H. M. Appleyard, W. Glen Dobie, T. Edgar Eccles, C. W. Harris, P. C. Thicknesse, A. Thornely, and W. E. Willink (Fellows), and Messrs. L. P. Abercrombie and S. McLaughlan (Associates); hon. auditors, Messrs. F. G. Briggs (Fellow) and L. B. Budden, M.A. (Associate). On the proposition of the Council Mr. Raoul Gariepy, Licentiate R.I.B.A., of Montreal, was elected a Fellow of the Society.

Mr. Stewart Bale, of Liverpool, read a paper on "The Work of an Architectural and Commercial Photographer." The subject was illustrated by a series of about eighty lantern slides, including many of the more important Liverpool buildings of recent date, and an extensive display of photographs adorned the walls. Views of the interior and exterior of the new Liverpool Cathedral and other important public buildings, a set showing the progress of the new Cunard offices at the Pierhead from the start of operations in the bottom of the old dock to the present day, a number of flashlight interiors, and the copies of oil paintings by well-known local artists, aroused particular interest and attention.

[We are glad to note the council's reference to the Town Planning Act, but should have liked a more emphatic expression of the view that in every town-planning scheme architectural advice is essential from the outset.]

Ipswich Master Builders' Association.

At the annual meeting of the Ipswich Master Builders' Association, Mr. Charles Green was re-elected president for the ensuing year, Mr. Robert Catchpole vice-president, and Mr. Charles Borrett treasurer and secretary. The executive committee was re-elected, with the addition of Mr. Buckingham Bird. It was decided not to hold the annual dinner this year.

ARBROATH'S NEW INFIRMARY.

The formal opening of Arbroath's new infirmary buildings took place last Saturday. The architect for the new buildings, which have been erected at a total cost of about £18,000, is Mr. Hugh Gavin, Arbroath, and Dr. Mackintosh, of the Western Infirmary, Glasgow, has been medical expert adviser.

The ground floor shows the patients' entrance in a small wing on the west side of the wards. This enters on a wide corridor stretching east and west, and joining the entrance are a waiting-room and an examination room. The medical wards are on the ground floor, one sexing those to the north of the corridor, and the other sex those to the south of the corridor. To the north of the corridor are ward with two beds and a ward with eight beds, each ward having suitable lavatory provision. A staircase leads to the wards on the upper floor, and within the wall of the staircase is a lift for patients. To the south of the corridor on the ground floor are two wards, each having a single bed, and also a ward containing eight beds, with a balcony on the south side, to which the beds of convalescent patients may be moved. This floor also contains ward kitchen and store room.

On the upper floor are the surgical wards, the accommodation being similar to that on the ground floor. Separating the wards from the administration is a long corridor, the sides of which are principally of glass, and a sun room and balcony to the south. On the ground floor of the administrative block is a porch on the east side of the block, which gives an entrance to the corridor. The nurses' dining-room and the doctor's room are to the west of the porch, and at the back are the dispensary and kitchen, with servants' messroom and stores, and a service lift to the upper floor. On the upper floor are the boardroom and doctors' room, to the front or south side of the corridor, where there are sun room and balconies. The X-ray room, operating room, and their subsidiaries are on the north side.

To the west of the administrative block, the nurses' and servants' home, a building of two storeys, with attic floor. Facing south is the nurses' sitting-room. There are ten bedrooms for nurses, two of these being provided in connection with the tuberculosis dispensary. The bedroom windows are to the south and west. The infirmary wards have been so constructed to obtain the maximum of sunlight. The laundry block contains boiler-house, engine-room, and a well-equipped laundry with disinfectant, and the boiler will also be used in connection with the heating of the various buildings. In the north-west corner of the ground are a mortuary and chapel, and there is a gate lodge at the north-east corner. A tuberculosis dispensary has been built by the local authority on a part of the ground which was bought by the Town Council, so that the dispensary may be wrought in conjunction with the infirmary.

The various contractors for the new buildings were: Mason work, Messrs. Christie and Anderson; joiner work, Mr. C. Farquhar; plumber work, Mr. T. R. Grant; slater work, Messrs. W. Brand and Co.; plaster work, Messrs. A. Donald and Co.; painter work, Messrs. W. L. Grant and Son; and grates, Messrs. J. S. Smith and Sons—all of Arbroath; electric light power and blinds, Messrs. A. Westwood and Son, Dundee, fireproof floors, Messrs. Construction Co., Glasgow; tile work, Messrs. R. Brown and Son, Ltd., Glasgow; and asphalt work, Messrs. W. Briggs

and Sons, Ltd., Dundee; heating engineers, Messrs. J. Cormack and Co., Ltd., Glasgow; hospital stoves, Messrs. Shorland and Brother, Manchester; patients' elevator, Messrs. Waygood-Otis, Ltd., London; kitchen apparatus, Messrs. R. and A. Main, Ltd., Glasgow; terrazzo floors, Messrs. Peter Fraser and Co., Ltd., Glasgow; floor polishing, Messrs. Arch. Hamilton and Co., Glasgow; sterilising plant, Messrs. J. Slater and Co., Ltd., London; laundry plant, Messrs. D. and J. Tullis, Ltd., Clydebank; iron railings, Messrs. J. Leven and Sons, Montrose; and laying out of grounds, Mr. A. Low, Friochnheim.

TRADE AND CRAFT.

Illumination in Workshops.

The Home Office has recently published the preliminary report of the Departmental Committee which has been investigating the conditions of lighting in workshops and factories with a view to securing legislation on this important point, and the evidence given by various witnesses which is collated in the second volume makes very interesting reading. On one occasion three working tailors were called in and examined, and one of them, describing how he attended a London hospital to be cured of eyestrain caused by inadequate illumination of the room in which he worked, remarked: "When I went in the man booked me as a tailor. I had not told him anything, so I asked him why he did that, and he said, 'Oh, I always know when the tailors come in.' It may seem a joke, but it is a fact."

That is very significant. It means that in a great number of cases employers are so behind the times as not to realise that good lighting is essential for their employees, especially if they are engaged on close work, such as sewing or machining, and more than ever when the materials worked in are chiefly black. An industry of this nature, to be really harmless, should be practised in specially constructed rooms, so designed as to admit of the maximum of daylight for the workers, and have in addition a satisfactory system of artificial lighting for supplementary use. Very many workshops, however, are built wholly or partially underground, or are insufficiently lit in proportion to their size, and for these the question of artificial illumination is of prime importance if the eyesight and general health of the employees are not to be injuriously affected. Inadequate lighting soon causes eyestrain and headaches, which lead inevitably to physical and mental lassitude, and output decreased as regards both quantity and quality, while a cover of darkness hides many sins of dust and dirt.

If the recommendations of the Departmental Committee become law, and the minimum amount of illumination at the floor level of workrooms is fixed at 0.25 foot-candles—a figure which is certainly not unreasonable, but which, though surpassed in many factories and workshops, is not yet attained in a considerable number, the managers of these latter will have to modify existing arrangements, and, if it is impossible to secure more daylight for the workers, to overhaul their lighting systems.

The question of hygiene (the British Commercial Gas Association point out, in a communication from which these extracts are made) is very important in a room, quite often a small one, in which a number of persons are working. Electric light, though it does not itself vitiate the atmosphere in any way by adding to it,

does not take anything from it, and—say the advocates of gas-lighting—an unventilated room becomes unpleasant owing to the accumulation of organic vapours from the skin and lungs of the occupants. It is claimed, on the other hand, that gas is a powerful ventilating agent, for the products of combustion are not in the least harmful in themselves, being composed of inert CO₂ and water vapour. Given proper ventilation, the heated air rises rapidly, and by the uprush disperses and oxidises the above-mentioned organic vapours in the atmosphere. The room, if low, must be fitted with outlets near the ceiling (in the form of open windows or otherwise) to carry off the products of the workers' lungs and skin, which are carried up by the slightly heated air; or, as an alternative, provided a high room improperly ventilated is flushed with air by opening every possible door and window in the intervals when the workers leave for meals. It is obvious that a room improperly ventilated in the first instance, and then crowded to the utmost limit of factory regulations, cannot be magically made perfect by gas lighting. All that the gas can do is to lift and clear the deleterious products of the human bodies, and to carry them to the proper place where they should be cleared away. If the room is allowed to cool without this "blanket" of human impurities being blown or drawn away, obviously they will descend again to the working level for the occupants to breathe in when they return. The custom of systematically flushing schoolrooms while the children are in the playground for ten minutes might be followed with advantage by factory and workshop owners whose premises are not blessed with the most perfect ventilating system. Any time lost would be more than made up in increased productive power.

NEW BANK PREMISES,
GATESHEAD.

Messrs. George Reayell, A.R.I.B.A., and W. Arthur Tebbs, Licentiate R.I.B.A., of Alnwick, are the joint architects of the designs for the new premises at Gateshead for Lloyds Bank, Ltd., which have just been completed. English Renaissance was selected by the architects as the style, and ranges of Ionic columns, with finely carved capitals, are the features of the fronts to West Street and Lambton Street.

The entablature and balustrade of the same order has been employed above these columns, embracing the first and second floors, and the whole stands on a ground storey of finely dressed masonry, with bold rustications. The richness of the composition is accentuated by fine and appropriate carving to the keystones and other features. The entrance to the bank is from West Street, and a doorway to balance this entrance is placed next the Post Office, giving access to the exceptionally fine and well-appointed suites of offices over the banking premises. Commodious caretaker's quarters are arranged on the top floor.

Internally, the banking hall is in keeping with the exterior, being panelled in richly moulded, polished, and fine figured mahogany. The counter, desks, and other fittings are in the same material. The main features are noble Doric columns at the sides, and a beautifully modelled ceiling in fibrous plaster. The floor over the strong rooms is of concrete, reinforced with steel, rendering the whole both burglar and fireproof. The floor covering to the public space is of Roman mosaic,

behind the counter and manager's room, of oak blocks.

The artificial lighting throughout is by electricity, the banking hall and manager's room having clouded bowls before the lamps, throwing the light to the ceiling, whence it is reflected in a soft and evenly distributed manner over the spaces below. The details affecting security from fire and robbery have received the most careful consideration, and provisions in this respect have been made both for the needs of the firm and for the safe keeping of the valuables of their clients deposited with them.

The contract was originally let to Mr. George Douglass, of Newcastle, and has been completed by Messrs. Bewley and Scott, of Dunston, on behalf of the executors of Mr. Douglass's estate.

The whole of the work has been carried out under the immediate supervision of the architects, with the assistance of Mr. James Tullis, of South Shields, who has acted as clerk of works.

THE BEGINNINGS OF GOTHIC ARCHITECTURE.

The "Observer" controversy on this subject, which has been somewhat abruptly closed by the editor, has brought two further letters, from which we take leave to quote.

M. Paul Mantoux, Professor of Modern French History in the University of London, writes:

"The question discussed by your correspondents on 'Gothic Architecture' has been definitely settled in the last fifteen years by the works of French and German scholars, of which I am sorry to say none of your correspondents seem to have the slightest knowledge. The first instances of the ogival style are some churches in the Ile de France, round Paris, which were built as early as the first half of the twelfth century. The earliest ones have no pointed windows. Augivus, in mediæval Latin, applies to the arch supporting the vault, instead of the massive walls of the Romanesque (or Norman) buildings. Such arches enabled the architect (1) to alter the proportions and make the whole structure much lighter; (2) to open large windows in the walls. And as the arches became bolder and higher, the pointed form followed as a consequence.

"As to the dates in this country, the choir of Canterbury Cathedral—after the fire which destroyed the Norman church in 1174—was rebuilt by a French architect, Guillaume de Sens. Lincoln Cathedral, sometime quoted as one of the earliest instances of Gothic work in England, followed more than ten years after, under Bishop Hugh, who held the see from 1186 to 1200. Now, Notre Dame de Paris, by no means one of the first built among French churches of the ogival style, was begun about 1160. Chartres Cathedral and many others were built at earlier dates.

"In the Middle Ages the so-called Gothic style was frequently mentioned as the French style, 'ars francigenus.' A French architect, Etienne de Bonneville, built Upsal Cathedral, in Sweden; the Duomo, at Milan, was built by Philippe de Bonaventura. Most of the cathedrals of the Rhine country in the thirteenth century were built after French models. This is no longer a controversial point, and there is not one scholar at the present time who thinks the matter is open to further discussion."

Mr. William Woodward, F.R.I.B.A., justly holds that:

"Whatever interpretation may have been placed upon the term in its earlier use, no idea of 'barbarism' now attaches to it." He further contends that "Very few architects would agree that 'Gothic is correctly and truly French architecture'; it is in its chronology and in its detail quite as much English architecture, and each has its own distinctive beauty of ornament and of detail." As to definition, he thinks "Mr. Ambler's 'Pointed' is the better one, and Mr. Scriven well remarks that the dominant feature of 'Gothic' is its 'perpendicular lines, and the lightness of its structure' and he (Mr. Ambler) could have added that the dominant feature of 'Classic' is its horizontal lines and the heaviness of its structure."

NEWS ITEMS.

The Scott Memorials.

The Prime Minister will unveil in St. Paul's Cathedral the bronze tablet to the memory of Captain Scott and his colleagues. At a later date a statue will be erected in their honour, probably in the grounds of Greenwich Hospital.

Bradford Business Firm's Extensions.

Messrs. Brown, Muff and Co., Limited, have acquired possession from the executors of the late Mr. W. James of the block of buildings at the corner of Tyrrel Street and Ivegate, Bradford. The new addition will necessitate a large scheme of reconstruction, for it is intended that the old and new blocks together shall form one of the most up-to-date retail business houses in the North of England.

Town Planning Scheme Awards at York.

Professor Abercrombie, the adjudicator in the competitive schemes submitted for the town planning of the suburbs of York, has recommended that the three premiums be paid as follows: 1, Mr. R. Dann, Crawley, Sussex; 2, Mr. M. A. Piercey, Warrington; 3, Messrs. Noel Stephen and H. O. Burroughs, Liverpool, and he also commends a scheme submitted by Messrs. Allen, Thompson, and Thorpe, of London.

London Development.

Sir Aston Webb, presiding at a meeting of the London Society, pleaded for a supreme authority to direct future development. London, he said, was encircled with town-planning schemes which ignored the arterial roads asked for by the local authorities. They were therefore trying to obtain permission from the Government to appoint somebody—they did not mind who it was—to settle the lines once for all of these arterial roads. Exactly the same thing arose in connection with open spaces. All these matters could be taken in hand if they had the proper authority.

Forthcoming Sale of City Land.

On Monday, May 29, the Corporation of the City of London will offer by public auction, on a building lease for ninety-nine years, a site now occupied by 43, Moorgate Street. There is an entrance in the rear from 70, Coleman Street, and the total ground area is about 1,780 ft. super. Bearing in mind the abnormal circumstances now existing by reason of the war, the Corporation are granting unusual facilities in reference to the period of the peppercorn rent, and the time allowed for re-building. The auctioneers entrusted with the administration are Messrs. Jones, Lang, and Co., 3, King Street, Cheapside.

CANADA'S NEW PARLIAMENT BUILDINGS.

Draft plans of the proposed new Parliament Building at Ottawa have been completed by the architects in charge, who have been busily at work since the week following the fire which demolished the former buildings. The plans are more or less tentative, and have yet to receive the formal approval of the Cabinet and of Parliament; but it is probable that they will be carried out substantially without alteration. No definite estimate has yet been made as to cost, but it will probably be about \$1,500,000, and it will require about a year and a half to carry out the work.

The main features of the new plans are the preservation of the present architectural scheme of the whole front elevation as it now stands, the taking down of the west wing, which was undamaged by fire, but which did not preserve the original architectural harmony of the whole building; the construction of a new rear elevation following the lines of the original architectural scheme, but with a three-storey elevation corresponding to the front; the construction of chambers for the Commons and Senate at the west and east sides respectively of the building, instead of in the centre, a rearrangement of the office space in the interior, which will give 38 per cent. increased accommodation without sacrificing light or ventilation, and a main entrance hall and Court of Fame extending from the main entrance beneath the central tower clear through to the library in the rear. This latter wide corridor will give a much more imposing vista on entering, and will afford opportunity for a national gallery of statesmen in oils and in marble or bronze.

Externally, the new plans will provide for a harmonious architecture throughout. The front part of the building, as it stands at present with the walls intact, will be unchanged. The west wing, including the half-million dollar addition built in 1909-10 will be almost completely superseded by a three-storey wing following the lines of the original design, and eliminating the extra storey which was put on and which was out of keeping with the rest of the building. Where the Speaker's quarters were there will be a three-storey instead of a two-storey elevation on the Commons as well as on the Senate side.

The new Commons chamber will occupy almost the whole of the new west wing. It will be considerable larger than the former chamber, being 102 ft. by 63 ft. and providing ample space for some 320 members. The Speaker's chair, instead of being in the centre of the west side, as in the old chamber, will be at the north end, and the gallery seating will be much better arranged, both in regard to acoustics and in regard to accommodation for a much larger number of spectators.

The members' lobby and post office will be along the front of the building, with a big lounging and smoking room running along the ground floor on the west side of the Commons chamber. Committee rooms and reading rooms will be situated on each side of the main entrance hall, running from the front entrance back to the library.

On the Senate side the new chamber will be at the extreme east end, following the same line as the Commons chamber, but somewhat smaller. Fireproof construction and an adequate system of ventilation are being provided for. It is expected that the work of reconstruction will be begun this spring.

ELECTRICAL NOTES.

Supplying the Enemy.

German manufacturers are receiving financial support from their Government, so that their factories can keep going on non-military work and their branches in certain neutral countries can continue to take orders and execute them. It is in regard to the latter point that something has recently come to light in connection with engineering and electrical work generally, which has apparently not been brought to the notice of the daily Press. Manufacturers in this country who have trade relations or agents in neutral countries contiguous to Germany have observed that whenever they happened to quote for a contract or installation a German local branch has quoted very much lower—in fact, below the British cost price. It has been found that there are two reasons for this. In the first place the Germans quote in marks and accept payment on the depreciated basis of about one-third. Their price is therefore very much lower by comparison with the British price owing to the relatively much higher basis of the pound sterling. In the second place, the German Government has established some sort of fund from which their firms are compensated in respect of any sum they may have to drop in order to cut out the hated British firm.

There is, however, a more insidious dodge still, which has been attempted in connection with such neutral contracts. Germany is short of many things, particularly rubber and certain metals like copper, nickel, etc. Therefore, when accepting orders in neutral countries for, say, electrical installations, the local German branch makes it a condition that the purchaser shall supply it with cables or wires, or any other thing which cannot be exported from Germany, and for which a good price will be paid. The neutral therefore turns to Great Britain and tries to buy the wanted articles, raw or manufactured, sending Consular declarations that the goods are required for consumption in his own country—which is quite true. Luckily, our Foreign Office has seen through this trick, and a very wise restriction has been put on the export of certain materials and goods to neutral countries, namely, that proof must be given that they are required to be made up into articles for re-export to one or other of the Allies. Hence, British manufacturers, merchants, and contractors who are inclined to grumble at some of the export restrictions to neutral countries should bear in mind that the regulations are sound, and should be careful not to accept orders or to put work in hand without first getting licence to export.

Concealed Lighting in a Church.

The lighting of a church effectively is by no means an easy problem, owing to its lofty nature and large area, the absence of reflecting surfaces, and the presence of obstructing pillars, screens, arches, and galleries. To overcome these difficulties by large numbers of lamps and fittings is uneconomical, and when there is also the question of concealing the wires. The fittings also must harmonise with the style of the church and must not obtrude, and yet must be so placed as to provide an even illumination. A church is one of the few kinds of buildings where indirect or semi-indirect lighting is not always practicable, but where the roof is very high and has a dark surface direct lighting must be used. It does not follow, however, that the fittings or lamps need be visible, and this has been proved by an installation of concealed lighting at St. Dunstan's Church, East Acton. Owing to the funds being somewhat limited, it was decided to dispense with fittings and to employ trough reflectors concealed between the mouldings of the arches where these spring from the pillar capitals. The installation was carried out by Messrs. Duncan Watson and Co., of 62, Berners Street, W., in consultation with the B.T.H. Co.

Three extensive type Mirolux reflectors, each fitted with two 50-watt Mazda lamps, are provided on the east side of the pillars on both sides of the nave, so that the light is thrown forward and distributed with remarkable evenness throughout the building. The lamps and fittings can only be seen when passing down the building, but this does not matter as, of course, the congregation faces the other way. The value of the illumination on the top of the pews is from 2.5 to 3-foot candles, which is well above that usually allowed for church lighting. The chancel is lighted by a pair of similar reflectors on the east side just above the lower capitals of the pillars supporting the main arch, and the altar derives its lighting from single-trough reflectors within the reveals of the two side windows. Special fittings are installed for the organ and the vicar's stall, and the circuits are so controlled that almost any variation in the lighting can be secured. The wiring is enclosed in heavy gauge screwed braid throughout, and although run on the surface it is very inconspicuous. The installation is of special interest owing to its novelty and effectiveness and also for its low cost.



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LATE CONTRACTS, etc

ROADS & CARTAGE.

No Date. — **TAR-SPRAYING, ETC.** **Blandford.**—Tar-spraying and gritting of about 25,000 yards super of main and other road surfaces, for the Corporation. Particulars from R. Lake, Borough Surveyor, Blandford, Dorset.

MISCELLANEOUS.

No Date.—**MATERIALS.** **Rhondda Valley.**—Supply of building stones, bricks, lime, cement, timber, slates, and all other building materials necessary for the erection of new business premises, stables, etc., at Cwmparc, Rhondda Valley, for the Ton Industrial Co-operative Society, Ltd. Particulars from W. D. Morgan, M.S.A., Architect, 194, Ystrad Road, Pentre, Glas.

May 9.—**MATERIAL.** **Horncastle.**—Supply of road material, for the Urban District Council. Particulars from R. W. Clitherow, Clerk to the Council, Court House, Horncastle.

THE PROMOTION OF SCIENCE.

A meeting is to be held, at the invitation of the Committee on Neglect of Science, of which Sir Ray Lankester is Chairman this (Wednesday) afternoon, in the rooms of the Linnean Society, Burlington House, Piccadilly. Lord Rayleigh, Past-President of the Royal Society and Chancellor of the University of Cambridge, will take the chair at 3 p.m.

Four resolutions are to be submitted. The first declares that, in order to promote national efficiency, the natural sciences

should be made an integral part of the educational course in all the great schools of this country and should form part of the entrance examination of all universities. The second resolution calls upon the Government to increase the efficiency of our public servants by assigning capital importance to the natural sciences in the competitive examinations for the Home and Indian Civil Service, and by requiring some knowledge of the natural sciences from all candidates for admission to Sandhurst.

Tickets of admission to the meeting may be obtained on application to the hon. secretary of the Committee on the Neglect of Science, 28, Victoria Street, Westminster, S.W.

Many well-known public men have expressed their sympathy with the objects of the meeting.

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THE
ARCHITECTS' & BUILDERS'
JOURNAL.

Wednesday, May 10, 1916.

Volume XLIII. No. 1114.



A RELIEF. P. G. BENTHAM, SCULPTOR.

(Royal Academy Exhibition, 1916.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

MAY 10, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1114.

EDITORIAL.

TRUTH will out, even among Germans. One of them, a certain Herr Robert Schmidt, is quoted to this effect by a correspondent of "The Times": "If our enemies, as they have repeatedly proclaimed, desire to destroy German militarism, they will do well to cripple Germany economically. Without its powerful economic foundation this immense development of might in militarism could not flourish." As this is a point that we have almost grown weary of reiterating, we are not sorry to see it restated by the enemy, who, doubtless in an unguarded moment, has allowed himself for once to deviate into candour. He has stated the chief ground of the duty of the Allies to defeat Germany in the commercial war. Another German writer, quoted by the same correspondent, is more faithful to the German view. "England," he says, "is not fighting for any vague idea of freedom, but for her predominance in world trade. Her aim is the destruction of German foreign trade and Germany's export industry." This is the more typical utterance, and betrays the utter incapacity of the German mind to understand ideals that are not purely rapacious. By implication it admits what Germany is fighting for, and shows quite clearly the necessity for limiting the power which she so grossly abuses. If a British Treitschke, Nietzsche, or Bernhardt—but such a product of our country is unimaginable—he would have been promptly consigned to Broadmoor as a dangerous criminal lunatic; in Germany their insane immorality has been swallowed as gospel; and minds debauched and inflamed to an inordinate lust of aggression, worshipping what they should despise, despising what they should worship, and deliberately saying, with Milton's Lucifer, "Evil, be thou my good," cannot be expected to believe in disinterested morality.

What these wanton destroyers of venerable monuments, these pirates and assassins of defenceless women and children, may choose to think or to say of our motives is of no consequence. What is of importance is that, the Germans being less fit than Riff pirates to wield world-dominion, it behoves our commercial community to do all that is legitimate to restrain the business prosperity upon which German militarism is confessedly based. If German prosperity is the root of the trouble, obviously we must do our best to lay the axe to the root. Hitherto there has never been any desire in this country to restrict the commercial prosperity of Germany. It was more admired than envied, because, in our guilelessness, we thought that the Germans were achieving success by honourable means. We know better now. We know that they are not clean fighters—that they have forged our trademarks, pirated our machinery and undersold it with inferior imitations, have by highly organised confederacies insidiously and systematically sapped our industries, have sent into our commercial houses men

who were nothing less than mean spies, here with the sole and deliberate object of stealing our trade. Let it be vividly realised that the Huns are a predatory race. When, in their anxiety to obtain possession of Alsace Lorraine, they mouthed of patriotism, they were intent on self. "Out of twenty-eight million tons of iron extracted before the war from German soil, more than twenty-one million came from Lorraine; in fact, the mineral resources of Lorraine formed the economic basis of the present war." To restore to the French the coal and iron deposits which were originally developed by French capital and skill will be therefore not merely an act of justice, but an effectual check on German militarism.

France also has suffered severely from German "dumping" and other insidious practices; and M. Henri Hauser, who has just issued a valuable treatise on "Les Méthodes Allemandes d'Expansion Economique," summarises these methods as concentration of capital and enterprise, formation of enormous armies of labour, developments of agreements between producers, and the grouping of national resources for the purposes of world-conquest. Banking plays an important part in German commerce and industry—(1) by industrial share issues; (2) by loans to manufacturers, traders, and limited liability companies and (3) by banks themselves engaging in trading operations. M. Hauser, whose instructive book is reviewed at some length in the "Times Trade Supplement" for May—a publication that is rendering excellent and much-needed service to the commercial and industrial community—complains that "economic problems seem to be the last things thought of by public officials, and particularly Parliament." He shows also that Germany enjoys an enormous advantage over other countries in the matter of freights and rates. These are two points that the commercial community will press home in due season upon our own Government. It is because we feel so strongly how intimately the fortunes of the building industry, with its far-reaching ramifications, are concerned in the general prosperity of the country that we have, now and upon many occasions formerly, dwelt on the broader aspects rather than on the sectional and technical details involved. It will be soon enough to deal with the latter when the country is safe and sound on the broader issues. In the meantime, the great object is to secure an enlightened outlook and concerted aim and action.

General von Bissing, the German Governor of Belgium ("tempy.") as they say in military coteries), in a proclamation, calls in the aid of "German culture and energy in order to rebuild the ruined towns and make them true monuments of German culture." In a

flashingly satirical article in "To-day," M. Gasselien Lenotre asks: "Is it conceivable that any man should have possessed enough foolishness, fatuity, impertinence, vulgarity, and bad taste even to think of summoning on to this classic soil of noble edifices the builders to whom modern Germany owes the clumsy masses of stone that she dignifies with the name of monuments and which excite boisterous merriment in everyone who travels up the Rhine? Don't you huddle at the thought of the lovely Brussels Place, the airy Tower of Malines, the romantic Halles at Ypres, or the slender steeples of Louvain revised, corrected, or rebuilt by these bunglers in building materials who designed the atrocious Denkmals at Leipzig, the new station at Metz, and the indescribable Walhalla near Ratisbon? It would be a still more hopeless disaster for Belgium than the first." As our readers are aware, we are in entire agreement with M. Lenotre on these points; yet when, some time ago, we illustrated, in these pages, "The Brutality of German Architecture," a gentle remonstrance came from an eminent English architect. We admired his chivalry, but nevertheless felt justified in demonstrating the faithfulness with which architecture reflects or expresses the character of the people who produce it.

Mention of German architecture recalls a ludicrous adventure of the All Highest in that domain. A new Post Office for Darmstadt had been designed by the official architect, and the designs had been approved by the Grand Duke of Hesse. They were then submitted to the Kaiser, in the expectation that he would pass them in the usual perfunctory way, by simply affixing his august but cacographic signature to them. Nothing of the sort. It happened that the Kaiser was for the moment in one of his recurrent convulsions of aestheticism. He insisted on revising the roof. In the result, the Grand Duke had to convey to the Kaiser the painful intelligence that the revised roof was impossible on æsthetic grounds, and that the Central Postal Department had rejected it on technical grounds. The Kaiser's alterations must have been unspeakably bad, or nobody in Germany would have dared to refer them back to the autocrat, who is very typically German in his wildly absurd pretensions to omniscience and infallibility, and in his obstinate perversity.

Naturally enough, the Shakespeare tercentenary has revived the controversy about the site of Shakespeare's Globe Playhouse. Mr. George Hubbard, F.S.A., F.R.I.B.A., who a few years ago published an interesting pamphlet on the subject, holds that the site was north of what is now called Park Street, but Mr. William Martin is equally convinced that the tablet affixed to one of the walls of Messrs. Barclay, Perkins's brewery, on the other side of the street, does not bear false witness. He claims that the failure of Viisscher's Panorama to show the playhouse—an omission upon which the advocates of the north side lay considerable stress—is due to the fact that the engraver of the Panorama deliberately cut it out; and Mr. Martin further states that there is in existence a map, of date about 1632, which shows the Globe on the south side. It is essentially a question for experts, whose anxiety to be exact in such matters is admirable and commendable. Besides, it gives them many occasions for the exhibition of much skill of fence, which, however, while fascinating as a display of dexterity, leaves most of the onlookers absolutely indifferent to the point in dispute. For these Gallios approximate accuracy is sufficient. Whether the Globe was on the north or on the south side of Maid Lane (Park Street) is merely a nice point for scholars or pedants, and the general public do not in the least care how it may be settled, or whether it is never determined. "All they care to know

is that the Globe was somewhere near the site of the present brewery; nor are they greatly concerned to be quite clear as to whether it was Ben Jonson who wrote for the playhouse, and Samuel Johnson who sold the brewery on behalf of Mrs. Thrale, or *vice versa*, although the distinction is sufficiently marked for them by the adoption of Samuel's portrait as a label for beer-bottles. Architects, however, are keenly interested in the point that has been again raised, and would be glad to see Mr. Hubbard's rejoinder to Mr. Martin.

Land reform would seem to be imminent when a corporation advocates it. At a meeting of York City Council, the Health Committee secured the adoption of the following resolution: "That in the opinion of this council legislation is necessary to simplify and cheapen the transfer of land, so as to encourage the building of houses for the working classes." If other corporations follow this excellent precedent, reform is far more likely to ensue than if the demand continued to come exclusively from political agitators, housing enthusiasts, or organisations of builders, because it is so much more difficult to accuse a corporation of acting otherwise than in the public interest. Nevertheless, it is by organised builders—to be definite, by the National Federation of Building Trades Employers—that the most cogent and convincing advocacy of cheaper, easier, and more rapid transfer of land and buildings has been made. Mr. A. G. White, the general secretary of that organisation, in the statesmanlike survey of "The Outlook for the Building Industry" which he contributed to the 1916 issue of "Specification," summed up this demand in a single sentence: "What seems to be wanted in the matter of real estate is so to approximate its methods and management to that of other businesses that it may be dealt with as freely and as easily as stocks, shares, and debentures, and be therefore as attractive to business men as an investment for their necessary reserves of capital." York City Council is to be congratulated on its adoption of this basic view.

On a later page of the present issue we publish the conditions of the competition for memorial designs that has been organised by the Civic Arts Association, which thus inaugurates what we trust may be a very useful career. "Useful" is here chosen deliberately, because so many similar movements have come to naught through aloofness from mere practicality. This association has demonstrated by its very first step that, to use a phrase dear to a commerce-ridden community, it "means business." It intends to do something, and is apparently resolved to do it well. So far from assuming a lofty antagonism towards the commercial and practical applications of art, it has promptly approached them in a friendly and helpful and hopeful spirit, which seems to be cordially reciprocated; for we notice with much pleasure that the donors of prizes in the competition include Messrs. J. W. Singer and Sons, Ltd., of Frome; Messrs. Martyn, of Cheltenham; and by Mr. H. A. Bartlett, chairman of Messrs. Battiscombe and Harris. Upon the establishment and maintenance, extension and diffusion of an *entente* between those who preach art and those who practise it the success of the movement entirely depends, and it is of good augury that the Civic Arts Association appears to be fully aware of the fact, and to be acting wisely on the realisation that to abuse and condemn "commercial art" is not the surest way of elevating it. The new spirit observable on both sides of the argument is rich in promise of a saner era. With respect to the competition for memorial designs, it is gratifying to note that in the list of adjudicators are the names of several architects whose qualifications for the task are beyond question, and we have no doubt that many architects will compete.

THE GENERAL POST OFFICE, DUBLIN.

[SPECIALLY CONTRIBUTED BY A. E. RICHARDSON, F.R.I.B.A.]

IT is difficult to realise that during the week beginning with Easter Sunday the classic City of Dublin has been swept of some of its most precious buildings; that the even tenour of its affairs—official, domestic, and commercial—has been held in suspended animation. Yet the ancient capital of Ireland has passed through the stormiest period of its existence, before which the ferment of 1798, with its contagion of French Revolutionary ideas and the exploits of Wolfe Tone, the founder of the United Irishmen, pales into insignificance. We in England can form no picture of what Dublin has recently experienced; the populace, we are told, has watched the rapidity of events with drawn faces pinched with famine, expecting the unknown, for no limit to the atrocities of the rebels seemed possible after the first crash of gunfire. Dublin is smashed; its noblest street has lost its old aspect; the elegant Post Office has been gutted.

A fortnight ago Mr. R. M. Butler sent me two copies of the "Irish Builder" (March 25 and April 8), containing a full description of the General Post Office. Little did I think that the magnificent building, which has only just attained its centenary, would soon be desolated.

Mr. Butler's account of the building, in all its stages, is so good that it is difficult to add further detail, but the opportunity is favourable to give some particulars from personal observation which are not generally known.

I have before me as I write "Leigh's Road Book of Ireland," a charming pocket edition, bound in green morocco, published in 1827. Thackeray evidently took a copy of this book with him when he made his

memorable tour and notes for the Irish Sketch Book in 1842. He wrote: "In front of Carlisle Bridge, and not in the least crowded, though in the midst of Sackville Street, stands Nelson upon a stone pillar. The Post Office is on his right hand (only it is cut off), and on his left Gresham's and the Imperial Hotel." To this terse description of the centre of Dublin, for nothing escaped the great novelist's all-seeing eye, I will add an extract from a description of the building by the Rev. G. N. Wright, sometime Professor of Antiquities to the Royal Hibernian Academy. This gentleman indulged in an eloquent flow of rhetoric, but unfortunately it is beyond my power to render it with the true flavour of the brogue. His description reads: "The General Post Office of Dublin is one of the most remarkable edifices in that beautiful city, both for the elegance of its design and the happy choice of its position. A spectator placed at the southern corner of Earl Street, in Sackville Street, sees the front elevation of this noble edifice finely thrown into perspective, while the long unbroken line of Henry Street is excluded by the heavy, massive pedestal of Nelson's Pillar, which just then interposes on the left; the vast breadth of Sackville Street, the noblest city avenue in Europe, is expanded, enlivened by the continual passing of fashionable loungers and fashionable equipages, in addition to the bustle usually attendant upon the arrival and despatch of mail coaches at the Post Office of a capital city."

The engraving, from a drawing by George Petrie, R.H.A., shown on one of the plates in this issue, should be studied in conjunction with the foregoing passage.

The design of the building belongs to the Græco-



THE POST OFFICE, DUBLIN, AFTER THE REBELLION.

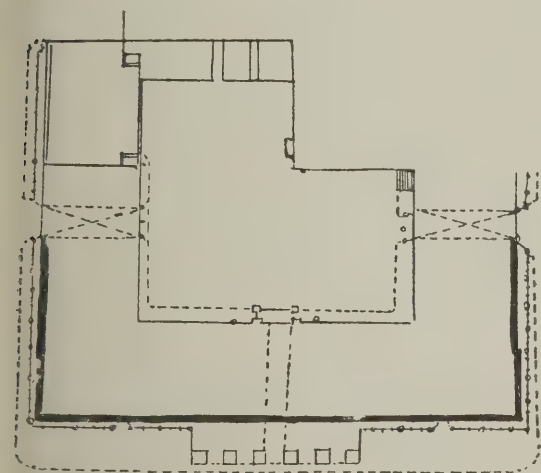
man phase of the Neo-Classic, as understood in England at the close of the eighteenth century; but the reason for this is all the more obvious when it is made clear that the architect for the Dublin building proposed the elevation of a well-known London picture for his purpose—namely, the façade of the East India House, which, until 1861, stood in Leadenhall Street. In 1798 Richard Jupp, surveyor to the East India Company, made a design for rebuilding the "House," but after Jupp's death in 1799 Henry Holland, who previously claimed to have originated the Græco-Roman style, prepared a fresh design, which was carried into being in 1800. This façade, with a few trifling alterations, was virtually lifted by Francis Johnston for the General Post Office at Dublin.

Holland's design consisted of a two-storeyed front of seven bays, marked at the centre with a slight Ionic portico, the arcaded basement storey being separated from the principal floor by a plat band, which appeared conveniently behind the columns when it reached the portico. This treatment was one usually adopted for Classic fronts at this period, Gandon's Customs House at Dublin being an example. It is the cause for wonder that the talented Francis Johnston seized upon such an acknowledged model of taste for his new building, the general scale being architecturally the same. The Irishman, however, did not suffer under the disadvantage of erecting a portico in a narrow thoroughfare as Leadenhall Street, and was at liberty to project six Ionic columns, each of 4 ft. in diameter, over the public way. The architect had a site to deal with 223 ft. in length by 150 ft. in width, and he proceeded to divide it up into fifteen bays, giving five to the interspacing of the portico.

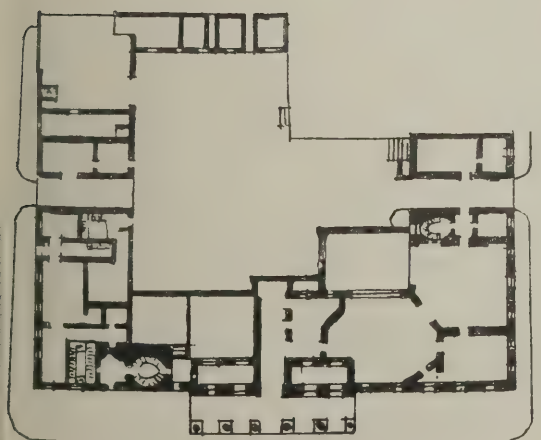
The problem demanded three floors, so direct copying of the prototype was out of the question, and with the exception of the bays between the pilasters of the portico, the windows of the Post Office were square-headed. The scale of the portico, on the other hand, compared very favourably with Holland's design, both buildings having a height approximating to 50 ft.

At this stage a few particulars of the life of Francis Johnston will be of interest. He was born at Armagh about the year 1759, and was sent in 1778 to Thomas Cooley, at that time architect to Primate Robinson, of Armagh. On the death of Cooley, Johnston was appointed architect to the Primate, and resided in Armagh from 1786 to 1793, superintending the erection of the tower to the Cathedral. After 1793 he appears to have visited Dublin, and to have been engaged upon the church of St. George, which was completed in 1814. Previously he had rebuilt in circular form the House of Commons, in the Parliament House, which had been destroyed by fire on February 27, 1792, owing to amateurish attempts to install an elementary form of central heating. After the Act of Union in 1802, Johnston was engaged to convert the building for use as the Bank of Ireland, and he designed the Cash Office, with its superb architectural treatment and distinctive lantern. In 1814 he was commissioned to design and superintend the erection of the General Post Office, the first stone of which was laid by Lord Whitworth in the same year. The building was completed four years later at a total cost of £50,000. The external walls of the Post Office were happily constructed of a blend of Dalkey granite and Portland stone, the latter material being introduced with very telling effect for the portico and the main entablature, the granite being tooled to hold light and shade and enhance the texture values.

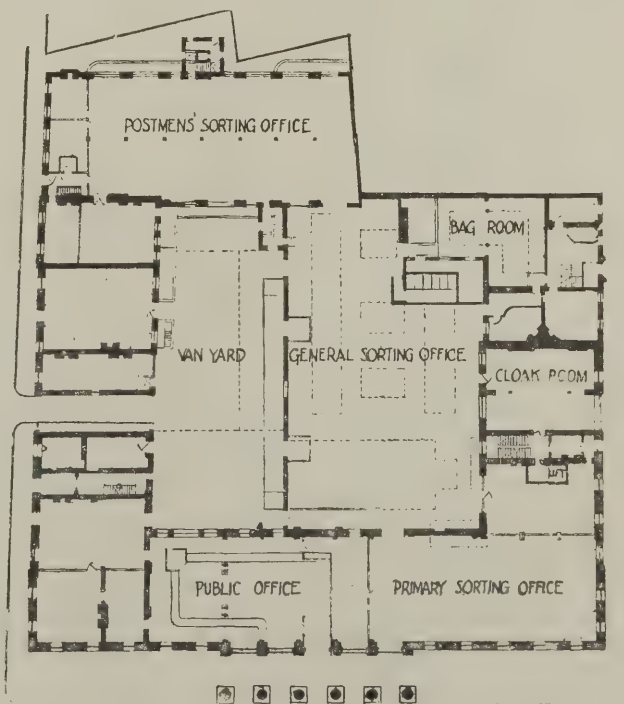
The projecting portico introduced an important incident into the character of the street. It was thrown out over the pavement without the use of lateral columns, and carried a full denticular Ionic cornice, the frieze of which was embellished with a species of the wild honeysuckle, executed in high relief, with all the loving care and sentiment which is an attribute of Irish carving of the period. With such exquisite work as that by Edward Smith at the Customs House it was



In 1837.



In 1866.



Present Day.

PLANS OF THE POST OFFICE, DUBLIN.

impossible for the craftsman to go wrong. The tympanum of the pediment carried the Royal Arms. It has already been stated that the portico was crowned with a full entablature, but this was changed on the wings to a band connecting with the frieze, thereby converting the denticular cornice, which ran completely round the building, into a species of architrave cornice; this expedient was necessitated by the third range of windows in horizontal sub-division. On the apex of the pediment stood a figure of Hibernia, resting on her spear and shield; on the right one of Mercury, with his caduceus and purse; and on the left Fidelity, with her finger on her lips and a key in her hand. The sculptures and the bust of Earl Whitworth were executed by John Smyth, A.R.H.A. Over the centre of the Post Office was a belfry, containing a chime of five bells, which was removed thirty-four years ago.

De Quincey, in "The English Mail Coach," has given a brilliant picture of the nightly despatch of the coaches from the Metropolis, such as the citizen of Dublin never witnessed. In the latter capital security was the first consideration, and the architect contrived an internal quadrangle within the building with gateways of ingress and egress. The coaches were admitted to this courtyard through an arch from the south, and after taking up their quota of mail bags were dismissed through a corresponding opening to the north. The arrangement is shown by the early plans of the building which are reproduced on the preceding page.

Leigh states: "The establishment of a separate Post Office for Ireland was first formed in 1789, under the government of two Postmasters-General, and there are now upwards of 400 places in Ireland at which this office delivers letters. The Penny Post, established in 1770, is also conducted in this building. Mail coaches were first used here in 1790, six years after their introduction in England. They leave the Post Office every evening at eight o'clock."

Thus one regretfully concludes an account of a building which will no longer offer a comforting reception to the pilgrim from England; it is like reading the obsequies at the funeral of a friend. Sadly I scan the notes in my sketch-books made in those happy days of sunshine when wars and rebellions were undreamt of. Those who know Dublin intimately have a steadfast affection for the place; it is a city of artistic charm, wearing that sad smile which is the heritage of Celtic beauty.

THE LATE MR. WALTER COOK.

MR. WALTER COOK, the well-known architect of New York, died on March 25 in his seventieth year. Mr. Cook graduated from Harvard in 1869 and received the degree of M.A. in 1872. In preparation for the practice of his profession he studied at the Royal Polytechnic School in Munich and at the Ecole des Beaux-Arts in Paris. He began practice in New York in 1877. Apart from his work as the architect of many large buildings, his activities in his profession were of an important character. He was president of the American Institute of Architects 1912-1913, an ex-president of the New York Chapter, and also served as president of the Society of Beaux-Arts Architects. As a member of the Municipal Art Commission of the City of New York he gave valuable assistance to that body. He was consulting architect to the Board of Estimate and Apportionment, and at the time of his death was consulting architect of the Court House Board of New York City. These distinguished activities were recognised by his election as an officer of the National Institute of Arts and Letters, as an Associate of the National Academy, and the bestowal upon him by the French Government of the rank of Chevalier of the Legion of Honour.

HERE AND THERE.

OTHERS, Mr. Gotch among them, have traced for us the development of the English home, but a little book picked up second-hand from the stall, a little anonymous volume published in 1880 suggests to me that some "potted" history might be given in these columns; so I will make an attempt, beginning with those old school friends the Saxons and the Danes. Years ago I read about Egbert, Athelstan, Canute, and the rest of the royal crew, and a later taste for architecture has directed our eye to the long-arched short work and the adzed stone, relics of Saxon building. But this gives us no idea of what the Saxon home was like, and it would be hard to conjure up the picture of it if the minstrel had not handed on the verses. In the Saxon home, then, or rather in the more or less royal home—for there were no household enthusiasts in those days, and the common people lived in nothing better than hovels—the mead-hall was the great feature, a very ample place furnished with many a bench, whereon were set bowls and basins, dishes and platters, of iron and bronze, and glass, to especially glass mead-cups with a round narrow bottom, so that the guests could not set them down when full, but were expected to drink off the content at a draught and then turn the glass upside down on the board; all this, be it remembered, very characteristic of a time when the drunken revel was regarded as almost a religious rite. The windows of the hall were unglazed, a thin piece of canvas stretched over the lattice being the only protection against wind and rain, and of course there were no chimneys, but a fire instead in the middle of the hall, its smoke finding a way out through openings in the roof. No doubt it was cosy enough by this fire, but on cold nights it must have been decidedly uncomfortable in the private apartments of the house, which appear to have been excessively draughty, despite "wall clothes" and tapestries. Furniture was rude and simple. A chair at the high table was the chief feature of the hall, where benches were fashioned of unplanned planks. Occasionally a cloth was spread on the table, but as the Anglo-Saxons helped themselves to meat with the fingers, the cloth was probably intended for wiping the hands rather than spread in compliance with a feeling of refinement. As for artificial lighting, there were candles of a sort, and the story runs that it was the consequence of the flickering of the candles in the draught from windows and doors that Alfred was led to invent the lantern, which may be regarded as the first step towards fire protection in buildings. Such protection was very badly needed in the wood-burned Saxon house, and it was the fear of fire indoors that caused all cooking to be done outside.

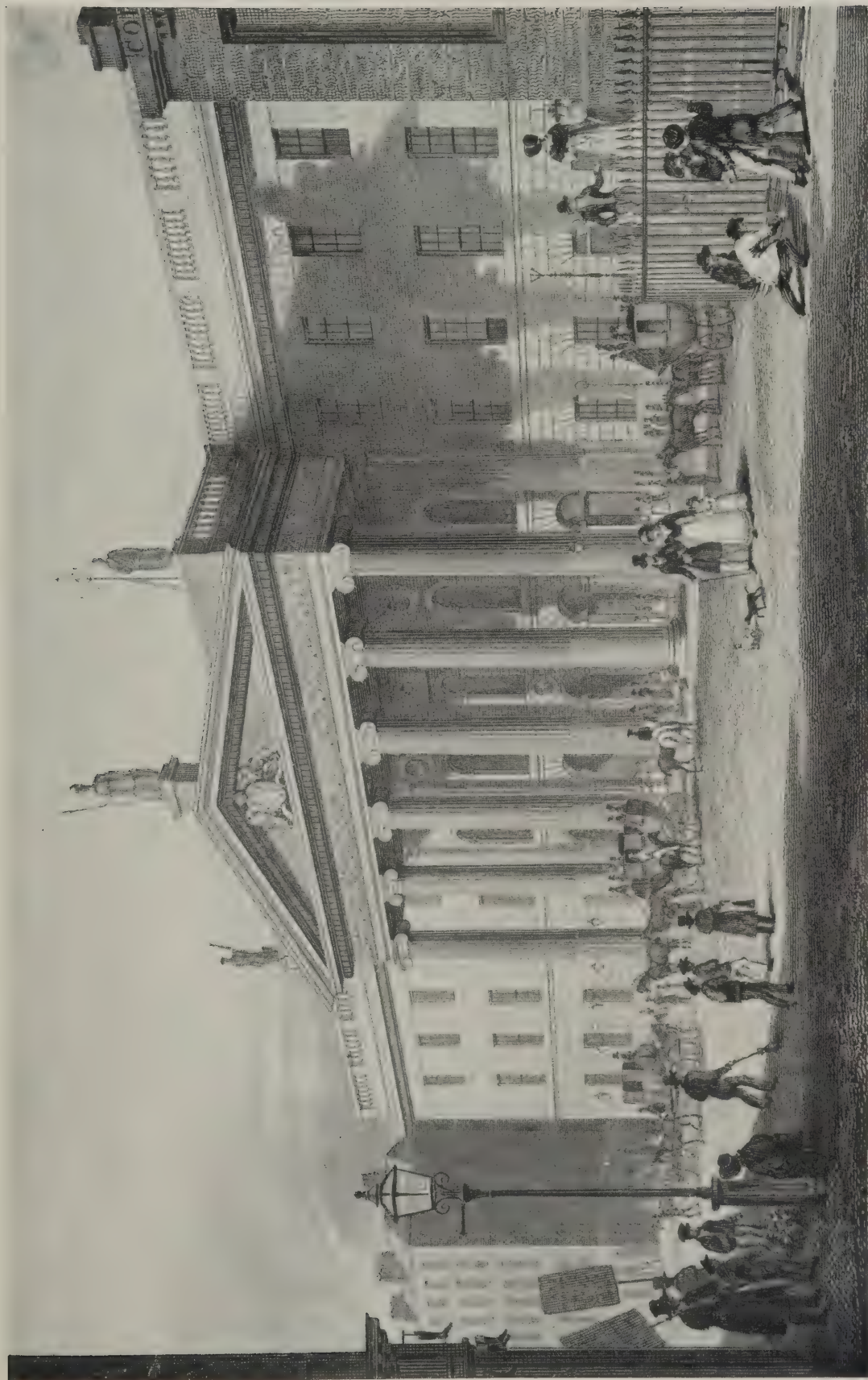
* * * *

If we would seek a glimpse of what life was like in the feminine portion of the Saxon home, we have here: Fancy leads us into the bower of Ethelwynn, who is busy with her maidens embroidering a beautiful chasuble. The door opens and a monk enters, dressed in a long dark tunic. He carries a curiously-shaped harp, which he hangs on the wall, and then proceeds to admire the work of the Saxon ladies. Being himself a skilful limner, he sketches for the fair Ethelwynn some new designs for her needle, and further gratifies his friends by displaying a book enriched with exquisitely-coloured paintings, the result of many hours of labour. Time glides away, when suddenly the ladies grow alarmed, for the wind, entering through the many crevices of the chamber, has struck softly on the Æolian harp on the wall, and inborn superstitious causes this to be regarded as a work of magic.

* * * *

It is just a little vision of the Saxon home, or so much of it as we are able to gain from the minstrel.

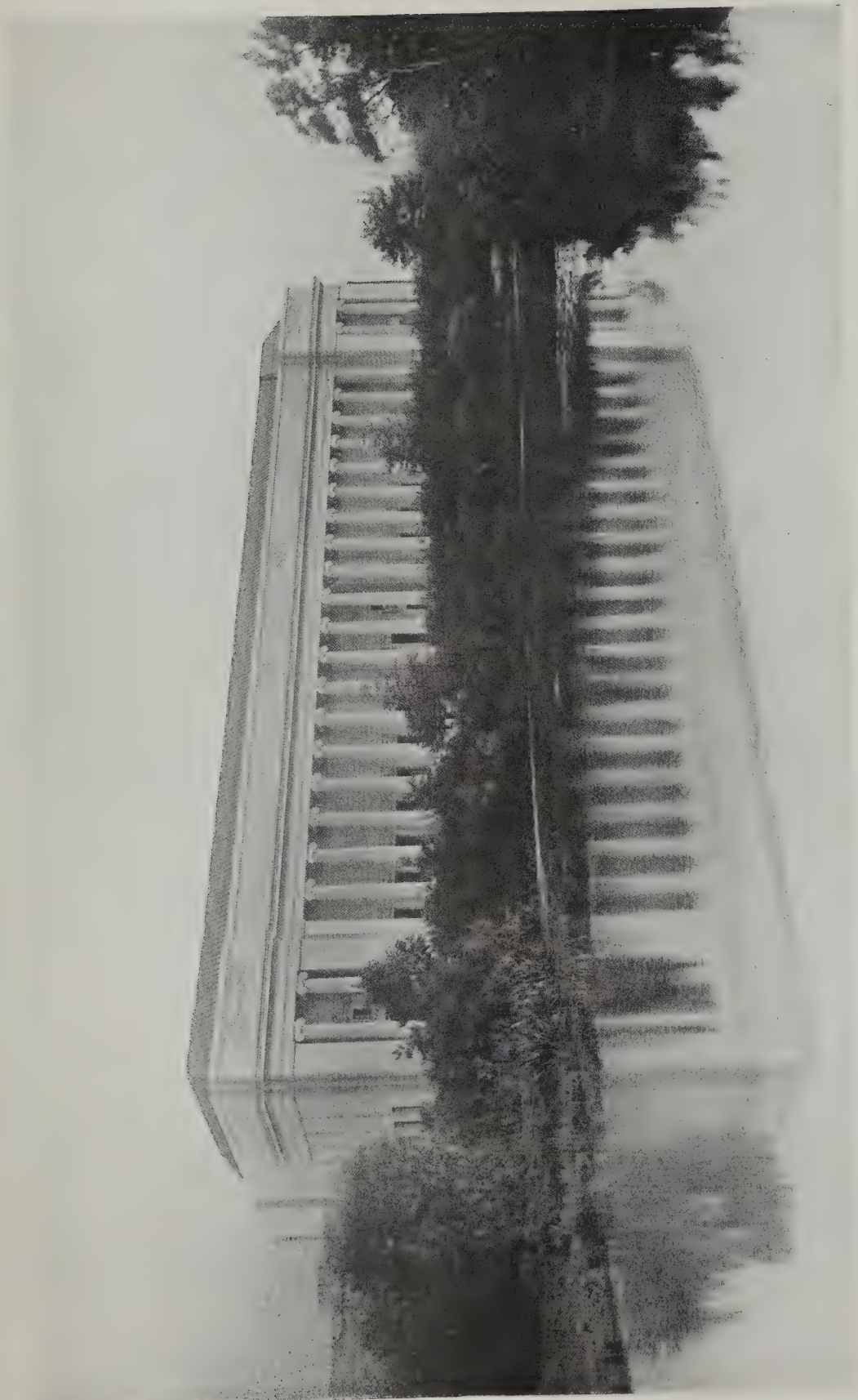
UBIQUE.



MONUMENTAL ARCHITECTURE. XLIX.—THE POST OFFICE, DUBLIN.

FRANCIS JOHNSTON, ARCHITECT.

(From an Engraving of a Drawing by Geo. Petrie, R.H.A.)

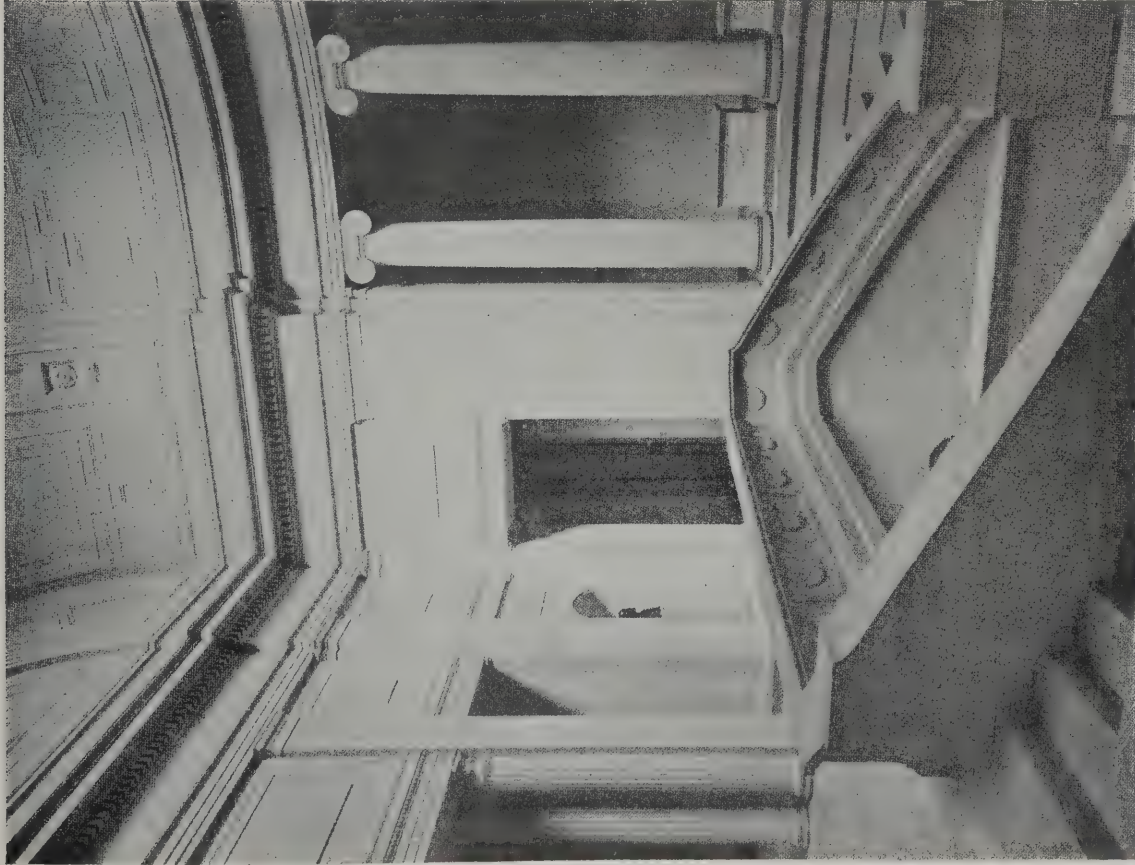


MODERN AMERICAN ARCHITECTURE. XLVI.—MUSEUM OF FINE ARTS, BOSTON, MASS. : NEW GALLERIES FOR PAINTINGS.

GUY LOWELL, ARCHITECT.

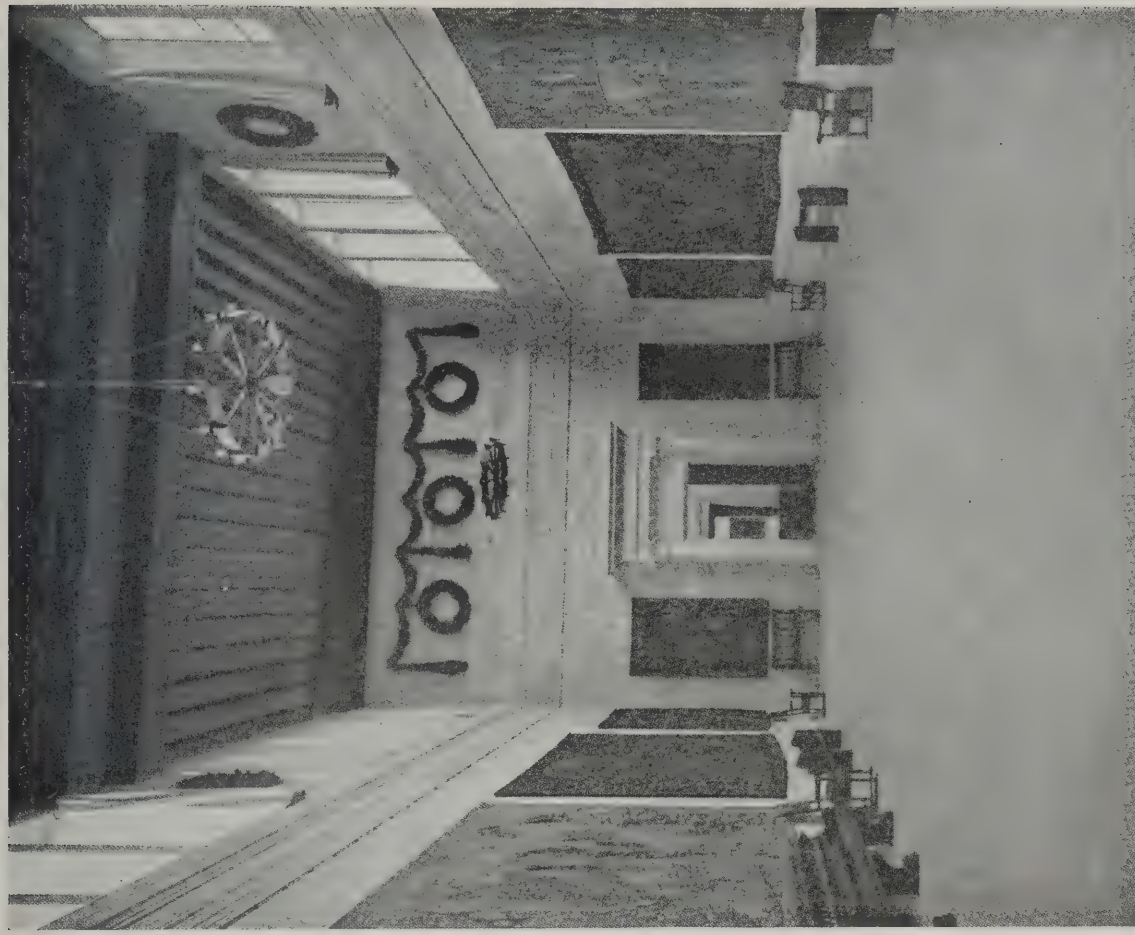


MODERN AMERICAN ARCHITECTURE. XLVII—MUSEUM OF FINE ARTS, BOSTON: STAIRCASE HALL.
GUY LOWELL, ARCHITECT.

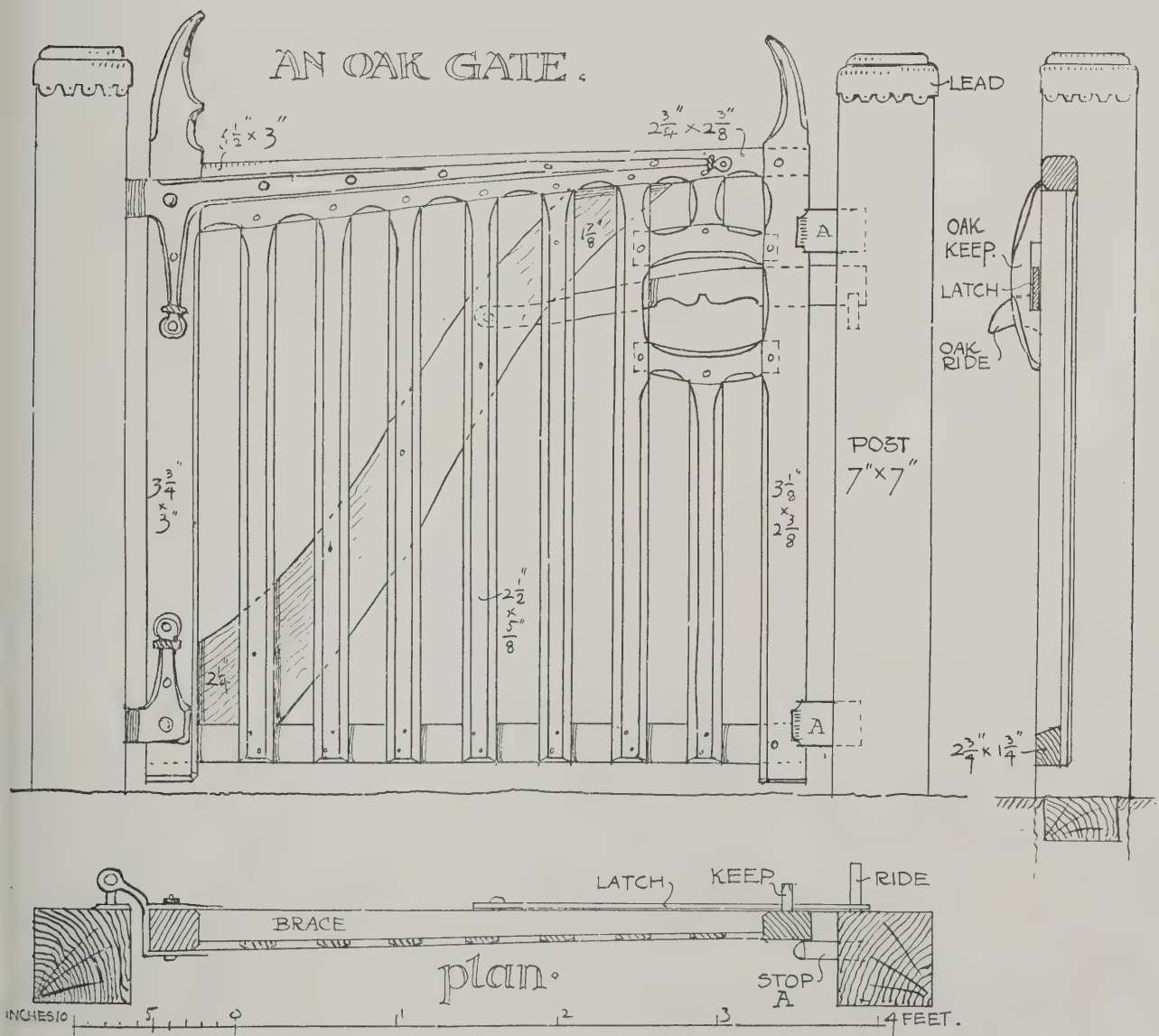
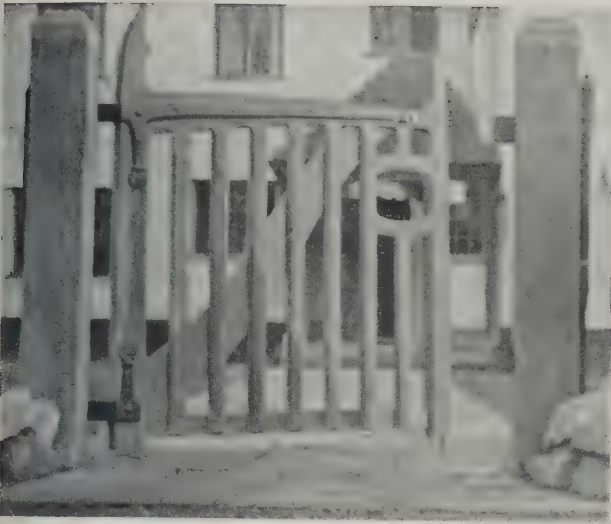


View on Staircase.

MODERN AMERICAN ARCHITECTURE. XLVIII.—MUSEUM OF FINE ARTS, BOSTON.
GUY LOWELL, ARCHITECT.



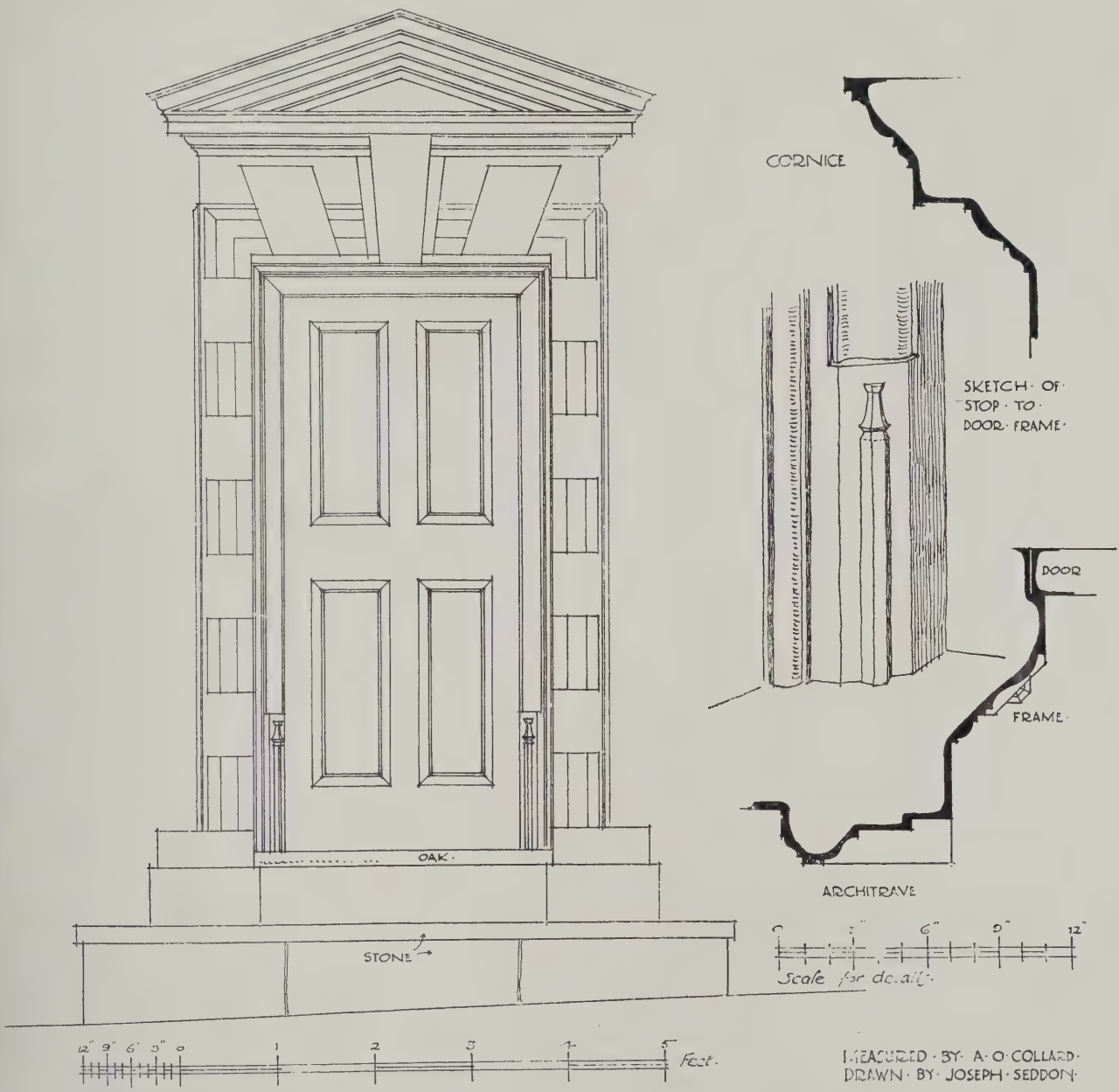
Tapestry Gallery.



MODERN DOMESTIC ARCHITECTURE (SERIES II.). XXXV.—GATE AT CHISLEHURST, KENT.

E. J. MAY, F.R.I.B.A., ARCHITECT.

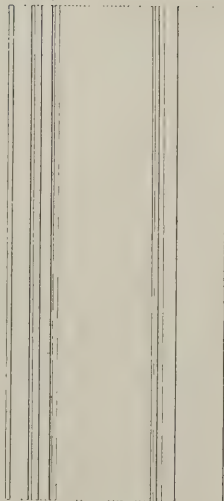
DOORWAY N°12 POTTERGATE STREET NORWICH



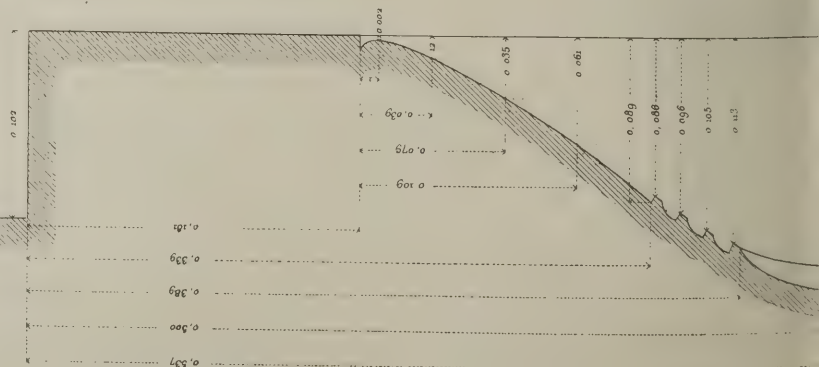
DOORS AND DOORCASES.—III.

TEMPLE D'APOLLON

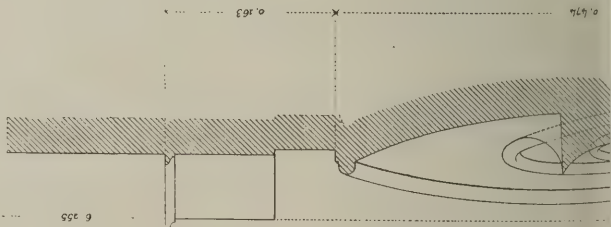
Ordre Ionique intérieur



Chapiteau.
0^m 25 p m.



Coupe.

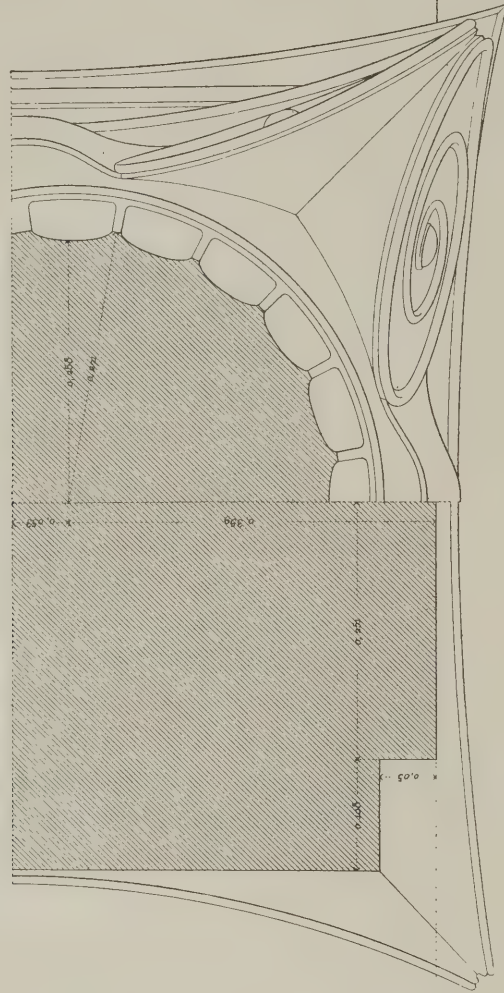


GRÈCE.

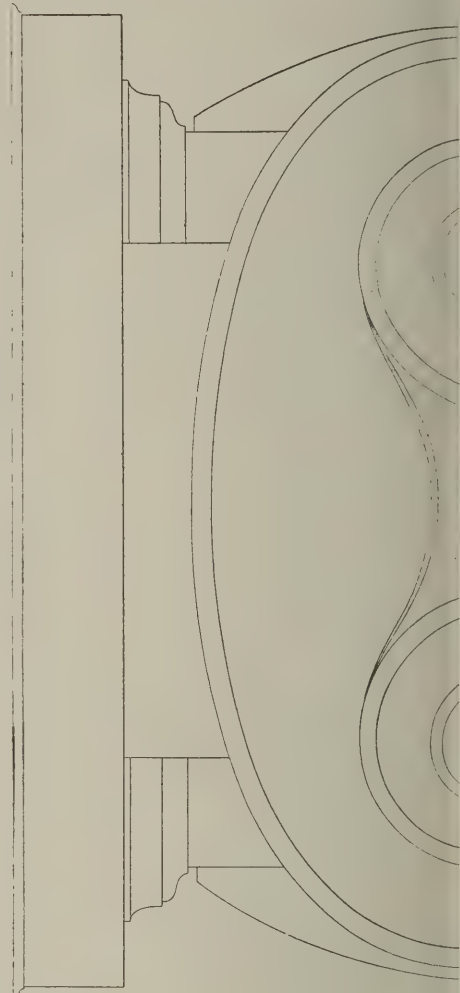
Plans

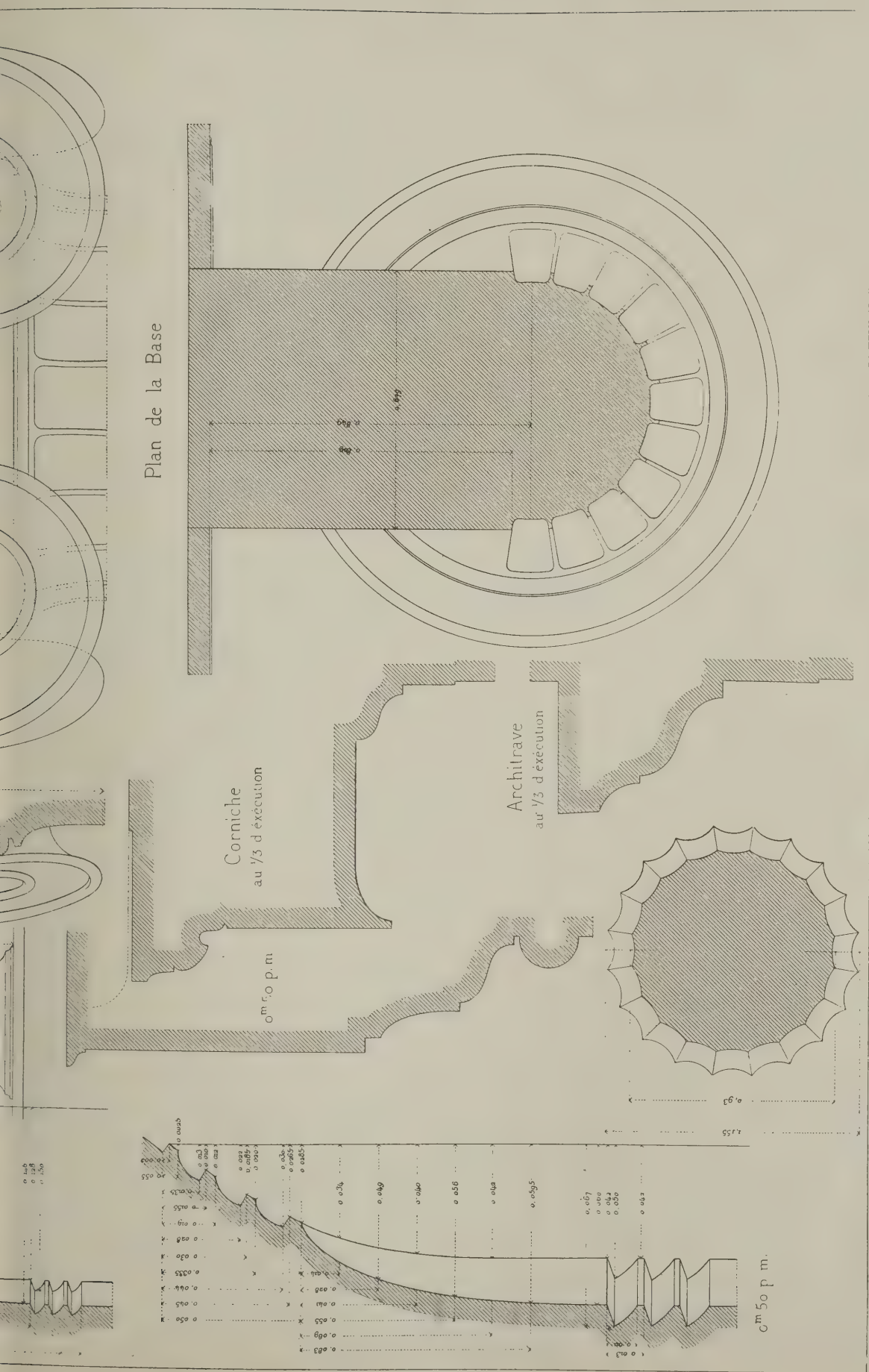
suivant A.B.

Vue du dessous



Face principale du Chapiteau





MONUMENTAL ARCHITECTURE. XLVIII.—TEMPLE OF APOLLO, ATHENS: DETAIL OF ORDER.

OF THE
UNIVERSITY OF ILLINOIS

THE PLATES.

The Post Office, Dublin.

THIS is fully dealt with in the article on page 194. Our illustration is made from an old engraving by Benjamin Winkles of a drawing by George Petrie, R.H.A.

Museum of Fine Arts, Boston.

Mr. Guy Lowell is an architect of marked ability, and in this Museum he has achieved a splendid result, the general scale of the building being grand, and the plan itself a work of art, as will be seen from the illustration below. A description of the Museum, written by the architect, appears on page 199.

Gate at Chislehurst.

This gate, by Mr. E. J. May, F.R.I.B.A., was not designed on paper, but was arranged with the wheelwright in his workshop with a board and a piece of chalk (the drawing which we reproduce was made after the gate was set up). It was made at Chislehurst from oak grown in the neighbourhood, each piece carefully selected for its purpose. The hanging stile, the top rail, and the brace, well framed together, form the backbone of the construction, as in the traditional country five-barred; the rest is just filling-in suspended from the main pieces. The curved top rail has a rise of $\frac{1}{4}$ in., and the whole gate diminishes in thickness

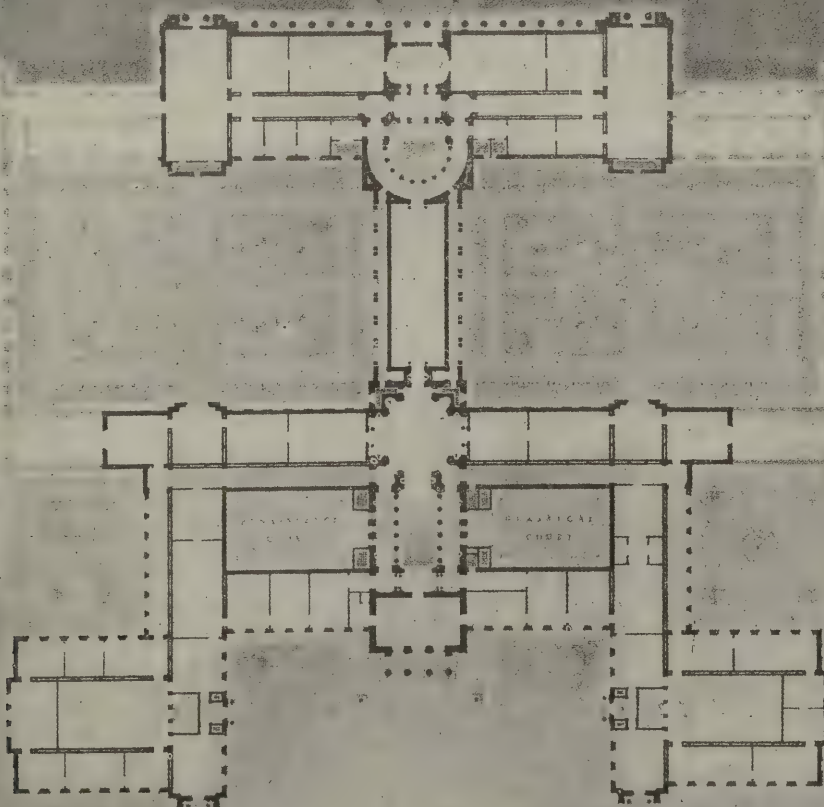
towards the shutting stile; this, with the ample draw-knife work on the pieces, makes for lightness. The uprights are not framed into the bottom rail, as that would provide a most usual and fruitful source of decay. The hinges have straps on each side, and were made in the same shop as the gate.

Doorway, Pottergate Street, Norwich.

This cottage doorway, in a back street of Norwich, exhibits an interesting survival of Tudor feeling in its door frame with stops, combined with fairly pure Renaissance detail in the wooden doorcase. It appears to be a well-preserved specimen of seventeenth-century work. So well proportioned is it that one is surprised on measuring to find that the actual door opening is only about 5 ft. 8 in. by 2 ft. 5 in.

Order of Temple of Apollo.

The Ionic capital of the Temple of Apollo at Phigaleia (not at Athens, as incorrectly printed under the illustration) is of a peculiar type, with the abacus treated as a sort of table above the volutes. It is difficult to set out properly; hence this plate should prove of much service. Some fragments of the temple, which were discovered by Cockerell, are in the British Museum, and it was on these that Cockerell modelled the capitals for his Tylorian Institution at Oxford, which offers perhaps the best example of them in England. This type of capital is admirably suited for metalwork.



MUSEUM OF FINE ARTS, BOSTON, MASS.: GROUND-FLOOR PLAN.

GUY LOWELL. ARCHITECT.

COMPETITIONS FOR WAR MEMORIALS.

IN our issue for April 26 we published a brief announcement that the Civic Arts Association intended to hold a competition for Memorials. We now give detailed particulars of it.

The competition is divided into eight classes, and competitors may enter for as many classes as they please. Each class will be judged by a jury of not fewer than three chosen by the Executive Committee from amongst the following:

Charles Aitken.	Bernard Rackham.
R. Anning Bell, A.R.A.	A. E. Richardson.
George Clausen, R.A.	W. Rothenstein.
The Earl Ferrers.	Charles Shannon, A.R.A.
Graily Hewitt.	Charles Sims, A.R.A.
Professor Selwyn Image.	E. Catterson-Smith.
T. Stirling Lee.	F. W. Troup.
Professor W. R. Lethaby.	Lawrence Turner.
Sir Robert Lorimer.	Allan Vigers.
Eric Maclagan.	Emery Walker.
Thomas Okey.	Edward Warren.
H. R. Hope-Pinker.	W. W. Watts.
Professor Beresford Pite.	Lawrence Weaver.
F. W. Pomeroy, A.R.A.	Henry Wilson.
Prof. E. S. Prior, A.R.A.	

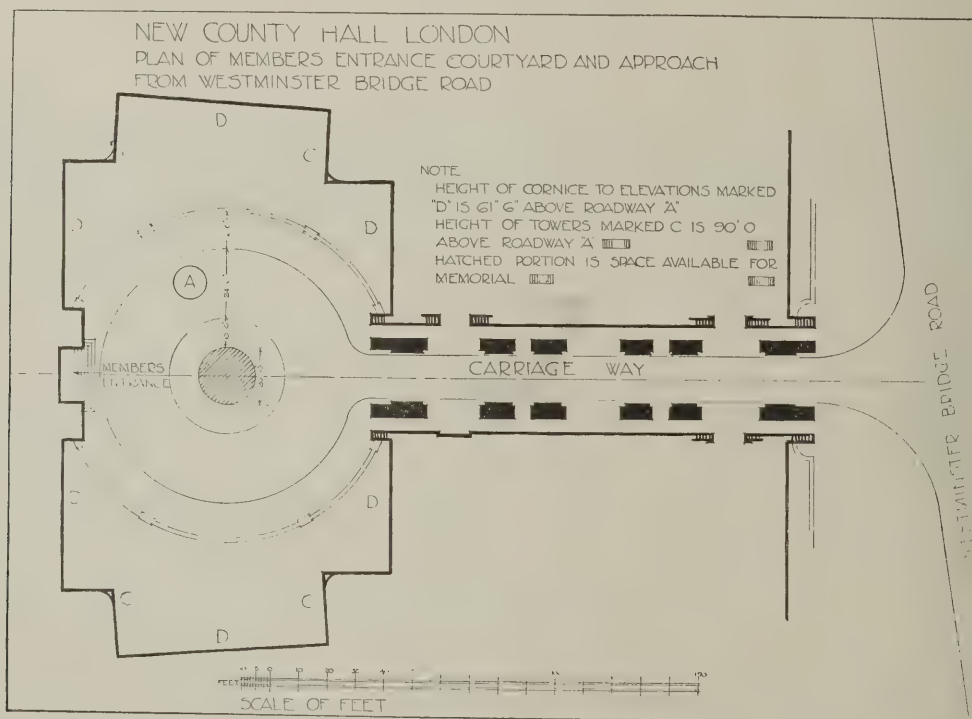
The awards of the juries will be final, and in the event of all the designs submitted in

chosen for the purpose will be exhibited at the galleries of the Royal Institute of British Architects during July, and the Civic Arts Association reserves the right to exhibit selected designs in the provinces after the London exhibition. Designs are to be called for by competitors when notified, or will be returned by the Association. All rights are reserved to the authors except as hereinafter provided in Classes II. to V., and the Association takes no responsibility in this matter. The prizes are independent of any commission payable for the use of the design after execution. The Civic Arts Association reserves the right to allow the publication, within twelve months, of any design, etc., submitted, and in such event the author's name will be given. Designs are to be drawn on stout paper, and must not be mounted on card or stretchers, or framed or glazed. The sheets may be finished with a border. In Class VI., however, canvas and mounting are allowed.

The London County Council is in no way committed either to the memorial or to designs which may win the prize, but the Civic Arts Association will submit prize designs to the London County Council for its consideration.

Competitors are permitted to visit the site in order to study the character of the surrounding buildings, and if further information is required as to the portion of the building not yet completed, it may be obtained from the architect, Mr. F. Knott, Adelphi Terrace, House, Adelphi, W.C. The accompanying sketch plan shows the limit of the size for the base of the monument, namely, 20 ft. in diameter; it should not exceed 32 ft. in height. The materials should be Portland or Purbeck stone, or stone and bronze—not marble.

The drawings are to include a plan and one or more elevations to a scale of 1/4" to the foot, and such other details as may be required, but not more than two Imperial (30 in.)



any class being regarded as unsatisfactory, the right is reserved to withhold the awards.

Designs, etc., are to be clearly marked with the number of the class only. No device or signature to be used. Accompanying each design, and attached to it, must be an envelope, sealed with a blank seal, containing the name and address of the author, to be opened after the award. The designs, etc., with their envelopes, will be numbered in order of receipt. Competitors submitting more than one design must send a separate envelope with each. All designs submitted must be entered in the name or names of the actual designer or designers. The name of a firm may be appended but not substituted for the name of the designer. All drawings and models must be delivered carriage paid at 23a, Maddox Street, on Monday, July 10, between 9 and 4. The prize designs and such others as may be

Class I.

DESIGN FOR A MONUMENT suitable for erection in the centre of the members' courtyard at the new County Hall, London [this courtyard is approached from the entrance to the buildings in the Westminster Bridge Road] in commemoration of those of the London County Council Staff who sacrificed their lives in the War. The donor of the prize desires that a cross shall form part of the design, and that the symbolism shall be religious. The general character of the monument should be sculptural rather than architectural, but with due regard to the nature of its setting. Provision is to be made for a brief inscription, but not for lists of names. No design will be considered that obstructs too much the view of the entrance doors from the Westminster Bridge Road. The cost of the monument is left to the judgment of competitors, with the intimation that it should not be unduly large.

22 in.) sheets may be sent in. In addition to the scale drawings, competitors must submit a perspective on a sheet not exceeding 15 in. by 22 in., or a model to a scale not exceeding 1/4 in. to a foot, or both perspective and model.

A first prize of £50 and a second prize of £15 will be awarded.

Class II.

DESIGN FOR A WALL TABLET cast bronze, the area not to exceed 4 sq. ft. super. The inscription is not to exceed forty words; its composition is left to the discretion of competitors, subject to its being in memory of an individual soldier who has fallen in the War. The design may include figures, a coat of arms, or a regimental badge. It must be such that it could be executed for £50, and must be shown by a half-full-size plan and elevation, and such full-size details of mouldings, lettering, etc., as may be thought

necessary, all drawn on one Imperial sheet; or a model may be submitted.

A first prize of £20 and a second prize of £5 are offered by Messrs. J. W. Singer and Sons, Ltd., of Frome, who reserve the right to carry out any designs submitted in this class on payment to the designer of royalties of 10 per cent. on the value of tablets executed from the designs.

Class III.

DESIGN FOR A WALL TABLET in carved wood (the nature of the wood is left to the competitor's discretion), the area not to exceed 5 ft. super. The inscription to be in raised lettering and not to exceed fifty words; its composition is left to the discretion of competitors, subject to being in memory of an individual soldier who has fallen in the War. The design must be such that it could be executed for £50. It must be shown by a half-full-size plan and elevation, and such full-size details of mouldings, carving, lettering, etc., as may be thought necessary, all drawn on one Imperial sheet.

A first prize of £20 and a second prize of £5 are offered by Messrs. H. H. Martyn and Co., of Cheltenham, who reserve the right to carry out any design submitted in this class, on payment to the designer of royalties of 10 per cent. on the value of all tablets executed from the designs.

Class IV.

DESIGN FOR A WALL TABLET in marble or stone, the area not to exceed 5 ft. super. The inscription is not to exceed forty words; its composition is left to the discretion of competitors, subject to being in memory of an individual soldier who has fallen in the War. The design should include a coat of arms or a regimental badge, or both, and colour or gilt may be used in the decoration of the tablet. The design must be such that it could be executed for £25. It must be shown by a half-full-size elevation and such full-size details of mouldings, lettering, etc., as may be thought necessary, all drawn on one Imperial sheet.

A first prize of £20 and a second prize of £5 are offered by Mr. H. A. Bartlett, chairman of Messrs. Battiscombe and Harris.

Class V.

DESIGN FOR A SIMPLE WALL TABLET in wood, the area not to exceed 5 ft. super. The inscription is not to exceed forty words; its composition is left to the discretion of competitors, subject to being in memory of an individual soldier who has fallen in the War. The design must be such that it could be executed for £10. It must be shown by a half-full-size plan and elevation, and full-size details of mouldings, lettering, etc., as may be thought necessary, all drawn on one Imperial sheet.

A first prize of £20 and a second prize of £5 are offered by Mr. H. A. Bartlett, chairman of Messrs. Battiscombe and Harris, who, in this Class and in Class IV., reserve the right to carry out any design submitted on payment to the designer of royalties of 10 per cent. on the value of tablets executed from the designs.

Class VI.

MURAL PAINTING FOR A BOYS' CLUB. Two prizes of £10 and £5 are offered for designs for a wall painting such might be carried out in the hall of a boys' club or Board school to commemorate those from the club or school who have died during the War. The subject of the painting may be either religious, allegorical, legendary, or an actual scene in modern warfare, and the painting may be

combined with lettering for the names of the members of the club or school.

The exact conditions depend upon the hall selected, but judging by the mural paintings already carried out in London County Council schools, in East London, through the Committee of the Exhibition of Mural Painting and Decoration of Schools and other Buildings, held at Crosby Hall in 1912, a convenient size for the paintings is 12 ft. 9 in. by 7 ft. 3 in.

Two drawings are to be sent in, both on Imperial sheets—(1) A coloured drawing of the whole panel to the scale of 2 in. to the foot, (2) a full-size figure or other detail of some part of the design.

It is undesirable that the designs should be executed in oil painting. They should be definitely of the nature of coloured drawings, and may be in tempera on paper or on canvas, or in watercolour on paper, and must not be framed or glazed, but may be mounted on pasteboard or on canvas and stretcher.

Designs selected for execution should be suitable for carrying out either (a) in fresco, tempera, or in some washable material on the walls; (b) in oil or tempera on canvas, or in tempera or body colour on paper stretched over canvas, in removable frames.

The question of materials will be discussed after the competition has been adjudged, if funds are subscribed for the execution of any of the designs.

Class VII.

A FOUNTAIN, architectural or sculptural, or a combination, for an open site in a country town or village, in memory of the local soldiers who have given their lives for their country in this War. The character of the design is left to the competitor, but the space for the inscription, of about forty words, must be included; it is important that this should be very clear.

Plans of two levels, a section, two elevations, and such other details as suggest themselves to the designer, may be shown, drawn on an Imperial sheet to a scale of $\frac{1}{2}$ in. to a foot. A perspective may also be submitted on a sheet not exceeding 15 in. by 22 in., or a model to a scale not exceeding $\frac{1}{2}$ in. to a foot. The estimated cost of execution not to exceed £200.

A first prize of £20 and a second prize of £5 are offered by the Right Hon. Charles Booth.

Class VIII.

INEXPENSIVE MEMORIALS FOR THE "HOME." There is a great need for a class of memorial which will be within reach of those whose incomes are very small, and at the exhibition it is hoped to put before the public designs and suggestions of this kind, such as tablets, medallions, frames for Rolls of Honour and photographs, caskets for mementoes, or stands for holding medals, etc.

Competitors should submit finished works, models, or drawings as nearly like the proposed object as possible. The best submitted will be exhibited in the hope that manufacturers will enter into negotiation with the authors with a view to reproduction. These memorials should be capable of being made in quantities at prices varying from 5s. to £2 each.

The proprietors of "Country Life" place at the disposal of the jury £25 and six copies of "Memorials and Monuments," by Mr. Lawrence Weaver, for award to designs, other than those gaining first and second prizes, which show special merit in any class.

Any communications in reference to the competitions should be addressed to the secretary of the Civic Arts Association, 28, Prince's Gardens, London, S.W.

THE MUSEUM OF FINE ARTS, BOSTON.

The following description of the Museum of Fine Arts at Boston, illustrated on our plates this week, is written by the architect, Mr. Guy Lowell. It appeared in a recent issue of the "American Architect"—

The general scheme of the Museum is the result of a very careful study, which extended over many years, of museums in America and Europe made by a committee of the trustees and a board of consulting architects.

The results obtained in foreign museums by differences of arrangement and of lighting were studied in further detail in a temporary experimental building where windows and skylights and wall surfaces of all kinds could be tried. The result of these experiments, the requirements of space to display the collections, the desires of the museum staff, were then carefully worked out in a series of plans, all aiming at the fundamental idea that each department of the museum, even in its incomplete temporary arrangement of first construction, should be reached without passing through another department, and that within each department the circulation of the public should be in a continuous line and should avoid all retracing of steps.

It was at this point in the evolution of the museum that Despradelle, with that clarity of vision with which he always saw the underlying idea of a large architectural composition, evolved the *parti* which was the basis of the original scheme approved by the trustees. As the president of the Board of Trustees at that time expressed it, Despradelle added the idea, which, like the drop of acid, crystallises a turbid solution. But in my opinion as an architect he did more than that. For when I was appointed the architect to build the museum he was appointed, together with the late E. M. Wheelwright and R. C. Sturgis, as consulting architect, and was always helpful with his advice and inspiring with his enthusiasm. He and Wheelwright spent long hours helping me to solve the knotty problems that constantly arose in a building that was so novel in its arrangement. The late S. D. Warren, the president of the museum, had a wide knowledge of museumology and a clear conception of the architectural problems, and was, too, always able to give real help. The death of Despradelle, Warren and Wheelwright, who helped me so generously during the designing of the first part to be constructed, cannot obscure the debt of gratitude which the museum owes them to-day.

The museum collections were to be divided into five departments. When the building is completed it will be possible to reach each department from the central rotunda at the head of the main staircase without passing through any other department.

The results obtained from rooms of various widths and different kinds of lighting were carefully observed in the temporary installation of pictures in the long cross gallery on either side of the rotunda, which was used before the Evans Gallery for Paintings was built, and this test enabled the museum authorities to determine what modifications of the original ideas about room sizes would be advisable in the permanent picture galleries which Mrs. Evans gave in memory of her husband. A comparison of the plan of the newer portion with the plan of the older

portion shows the modifications in width of top-lighted galleries and in the narrowing of side-lighted and smaller galleries which our experience led us to adopt. Furthermore, the increase in pitch given to the skylights, together with the greater volume of space thereby obtained between the skylight and the ceiling light, was of great advantage in producing a more complete diffusion of light which is so essential in a picture gallery. My own conclusions are that the great measure of success which has been obtained in the museum picture galleries can only be obtained in, top-lighted picture galleries by allowing the direct light originally concentrated as it comes through the roof skylight or high vertical windows to be reflected from a diffusing surface of maximum size so that though the total amount of reflected light will be high, the intensity from each unit of reflecting area will be low. If the source of concentrated light (vertical window or inclined skylight) is kept high, whether in a high side-lighted gallery like the tapestry hall or above a ceiling light as in the picture galleries, there will be more diffusing wall surfaces, there will be less reflection of brightly lighted surfaces from the pictures, and the brilliantly lighted areas, or sources of light, are more easily excluded from the angle of vision of the spectator.

OBITUARY.

The Late Mr. Harry Hems.

In the will of Mr. Harry Hems, ecclesiastical art worker and sculptor, of Exeter, the testator bequeathed a rood beam worked by himself to be erected in St. Sidwell's Church, Exeter. The rood, which has upon it a figure of Christ on the Cross and two flanking figures of saints, all said to be more than life size, was twice offered to the church by Mr. Hems in his lifetime, and on each occasion, after considerable discussion, the offer was declined by the vestry. At a recent meeting of the vestry the acceptance of Mr. Hems's bequest was discussed, and it was decided by 15 votes to 4 to apply for a faculty for the erection of the rood in the church, but it is probable that the application will be opposed step by step by those who hope to prevent its erection.

Lieut. T. P. Bausor, A.R.I.B.A.

Lieut. T. P. Bausor, A.R.I.B.A., son of Mr. Paul Bausor, of Lark Hall, Fordham, Cambs., who has been killed in action, was 29 years of age. He was educated at Retford Grammar School and the Perse School, Cambridge. He was trained in his father's office at Cambridge, after which he was for about two years architect to the Small Holdings Committee of Hereford County Council, leaving Hereford in 1911 to take up a similar appointment under the West Riding County Council, which appointment he held at the time of enlisting in September, 1914, when he joined, with friends, the Hereford Territorials. He was gazetted Sec.-Lieut. in K.S.L.I. in May, 1915, and married in May, 1915, Miss Morgan, of Hereford.

Mr. G. W. Dobson.

The death has occurred at 99, Maldon Road, Colchester, of Mr. George Wickham Dobson, sole proprietor of the firm of George Dobson and Son, builders and contractors, of Colchester. Mr. Dobson, who was fifty-six, had enjoyed excellent health until about four months ago, when he began to ail. The cause of death was cerebral tumour. The firm of George Dobson and Son was founded more than

sixty years ago by Mr. George Dobson, who died about ten years ago, and it had since been conducted by his son, the late Mr. George Wickham Dobson. The firm has carried out many important contracts, not only in East Anglia, but also in the Southern and Western Counties, and established a reputation for church-building.

SOCIETIES AND INSTITUTIONS.

Architectural Association.

A meeting of the Architectural Association was held at No. 37, Great Smith Street, Westminster, on Monday, May 1, at 4.30 p.m., Mr. H. Austen Hall (president) in the chair. A vote of sympathy was passed to the relatives of members of the Association who have fallen in the War since the last meeting; namely, J. C. Bucknill, Adrian T. Hardman, and G. M. Mackenzie. Mr. Arthur Davis and Mr. E. J. Armstrong (19th Batt. Middlesex Regt.) were elected members of the Association.

The election of officers for the session 1916-17 was announced as follows:—President, Mr. A. G. R. Mackenzie; vice-presidents, Mr. H. M. Fletcher and Mr. Stanley Hamp; hon. treasurer, Mr. F. Winton Newman; hon. editor "A.A. Journal," Mr. F. C. Eden; hon. librarian, Mr. V. T. Hodgson; hon. secretary, Mr. Ralph Knott; ordinary members of Council, Messrs. H. Austen Hall (past-president), Detmar Blow, Alfred Cox, H. Farquharson, E. Stanley Hall, E. Brantwood Maufe, W. G. Newton, W. J. Palmer-Jones, J. Alan Slater, T. Tyrwhitt, and Philip E. Webb.

Edinburgh Architectural Association.

Members of the Edinburgh Architectural Association and their friends, to the number of about fifty, paid a visit on a recent Saturday afternoon to Bruntsfield House (by permission of Vice-Admiral Sir George J. S. Warrender, Bart., K.C.B.), and to the Grange House (by permission of Col. Kidston Kerr, C.B.). The leader of the excursion was Dr. Thomas Ross, F.S.A. Scot., who submitted a plan of Bruntsfield House, and gave a description of the architectural features of the building. Mr. Moir Bryce gave an interesting history of the Warrender estate. Interesting descriptions were also given regarding the Grange House, where the party were entertained to tea by Colonel and Mrs. Kidston Kerr. Votes of thanks were given on the motion of Mr. MacLennan, A.R.I.B.A., president of the Association.

South Wales Institute of Architects.

At the annual meeting of the South Wales Institute of Architects, held at Cardiff, the retiring president was succeeded by Mr. Lennox Robertson, F.R.I.B.A. Messrs. E. W. M. Corbett, F.R.I.B.A., and Ivor P. Jones, A.R.I.B.A., were re-elected vice-presidents, Mr. Harry Teather, F.R.I.B.A., was re-elected hon. treasurer, Mr. Hesom Hiley, Licentiate R.I.B.A., hon. auditor; Mr. Lennox Robertson, hon. librarian; Mr. C. H. Kempthorne, Licentiate R.I.B.A., hon. secretary; and the following were elected members of the Council:—Messrs. G. Vincent Evans, Licentiate R.I.B.A., Glendennyn Moxham, F.R.I.B.A., J. Llewellyn Smith, Licentiate R.I.B.A., G. E. Halliday, F.S.A., F.R.I.B.A., Cholton James, F.R.I.B.A., David Morgan, F.R.I.B.A., Thomas Alwyn Lloyd, F. E. Rees, J. A. Sant, and Walter C. Cooper. The President, on behalf of the members

of the Institute, presented Mr. J. A. (the retiring hon. secretary) with a silver rose bowl, inscribed, as a mark of appreciation of his services. Mr. Lennox Robertson, the new president, was born at Cheltenham, and is the second son of late Dr. Lennox Robertson. He was educated at the Modern School, Cheltenham, and at University College, London, and afterwards became a pupil of Mr. H. H. Swiney, M.I.C.E., of the firm Messrs. Swiney and Fergusson, engineers and architects, Belfast. Mr. Robertson was elected a Fellow of R.I.B.A. in 1907.

BUILDING TRADE WAGES ADVANCES.

Manchester District.

Mr. James Denver, secretary of Manchester, Salford, and District Builders' Trades Employers' Association, writes the "Manchester Evening News" that agreement with this association the operative concreters and asphalters have granted an advance of 1d. per hour (9d. 10d.) as from May 1, together with slight alterations of working hours which provide for an extension of hours in the winter period from November 16 to January 15 by allowing the men to start at 7.30 instead of 8 a.m., thus increasing working hours during that period by 10 per week. This, in effect, increases average weekly wages during the period stated by 2s. 6d. per week. This settlement has also been accepted by the Builders' Association.

An agreement has been made which takes effect from May 1 that the operative bricklayers shall have one uniform set of rules to govern the districts of Manchester, Eccles, Swinton, and Irlam. To this date the districts have been controlled by separate rules, and whilst Manchester wages were advanced ½d. per hour (10½d. to 11d.) on November 1, 1915, the other districts did not benefit by a concession. The new arrangement means an increase of ½d. per hour (10½d. to 11d.), bringing them up to Manchester level. The districts of Eccles, Swinton, and Irlam. Other slight alterations have been made to the working rules.

The operative painters, by decision of their Arbitration Board, receive an advance of 1d. per hour (9½d. to 10½d.), and Eccles labourers, by agreement with the association, also receive an advance of 1d. per hour.

Application for improved working conditions other than wages are before the Conciliation Boards, on behalf of Manchester joiners and labourers.

Leeds.

About two months ago application was made to the master builders of Leeds for the local branch of the National Association of Builders' Labourers for an advance in wages of a penny per hour. The matter was referred to the local Conciliation Board, who have decided to grant an increase of a halfpenny per hour, to take effect from the ensuing pay day. Wages were advanced by an equivalent amount some time ago, and it was understood that this would be a settlement until the months after the war. Both applications were made on the ground of the increase in the cost of the necessaries of life, and a technical objection as to the second application being out of order because of the previous settlement was waived. The minimum wage for builders' labourers in Leeds now stands at 8d. per hour.

NEWS ITEMS.

Waterproofing Tanks.

We learn that a 5,000 gallon tank built at Cerne, Dorset, four years ago, with mudlo cement concrete is still perfectly watertight.

Drawings by the late Mr Mallows.

A collection of drawings of old work and sketches and designs by the late Charles Edward Mallows, F.R.I.B.A., kindly lent by his widow, is on view in the Common Room of the Royal Institute of British Architects, 9, Conduit Street, W., daily from ten till six, till further notice.

Housing Scheme for Selby, Yorks.

At a recent meeting of Selby Urban District Council, it was decided to ask the Local Government Board to recommend the Public Works Board to grant a loan of £7,800, repayable in sixty years, for thirty working class dwellings on the south side of Flaxby Road, and £7,870 for thirty-one houses in Carr's Terrace. Messrs. John Carr and Sons' contract for £7,140 for thirty houses on Flaxby Road was accepted, and that of Messrs. Ashton, Barton-on-Humber, for thirty-one houses in Carr's Terrace, amounting to £7,176 was also accepted. The Council decided that the rent of the houses should be 7s. 6d. per week.

Housing and Improvement League.

At a meeting of working men resident in the Pembroke district it was decided to establish a Pembroke Housing and Improvement League, having for its object the advancement of working-class interests in the district without political or sectarian bias. A provisional organising committee was appointed, with Mr. J. P. Dunne as chairman, Mr. F. Fleming as treasurer, and Mr. D. Byrne as secretary. The chairman referred to the necessity of healthy public spirit being created among the workers of the district, and pointed out the numerous reforms which could be carried out if supported by the force of public opinion.

Proposed New Bank Buildings for Forfar.

The two properties, forming Nos. 67, 69, 73, and 75, Castle Street, have been purchased by Mr. I. L. Alexander, local agent for the Clydesdale Bank, with the view, it is understood, of securing a site for the erection of new premises for the bank. This site, which is freehold and includes spacious garden ground in rear of the buildings, was some time ago chosen for the erection of a new post office, and provisional arrangements for its acquisition had been made by the postal authorities, but owing to the war this scheme has now evidently been postponed definitely.

Hastings Improvements.

Hastings Corporation have decided upon an improvement which will cost £100,000. Under this scheme, of which the portion completed was recently "inaugurated" by the Mayor, the parade extension becomes a public promenade, with a bandstand immediately around which 2,000 persons may be comfortably seated. Benches with tiers of chairs will each accommodate an additional 650 persons. Other items include a pavilion, to cost £5,000, and the laying out of an estate of 100 acres as the White Rock Pleasure grounds. This is 100 ft. above sea level, and commands a prospect of an unrivalled escape. Extensive rockeries have been

adorned with Alpine and other plants, and provision is made for bowling, tennis, and croquet.

New Library and Cottage Baths at Bradford.

A new Bradford municipal building, composed of branch library and cottage baths, has been opened at the junction of Undercliffe Street and Tennyson Place, with a frontage of 90 ft. to Undercliffe Street, and of 67 ft. to Tennyson Place. The library is the twenty-sixth branch library in the city and provision is made for 12,000 volumes. The cottage baths are the last of thirteen approved by the Council in January, 1914. The designs were prepared by Mr. W. Williamson, the City Architect. The cost of the new premises has been £6,780.

Proposed Garden City for Aberdeen.

At a meeting of the Finance Committee of the Aberdeen Town Council a letter was submitted from the Scottish Veterans' Garden City Association inquiring as to whether the Town Council had any ground in the vicinity of the city which would be suitable for the purpose of being laid out on garden city lines. The committee considered the matter and thought that perhaps the corporation's ground at Cairnry might be suitable, and it was agreed to place the matter before the next meeting of the 'Cleansing Committee for the consideration of the members of that committee.

Five Hundred New Houses for Lanarkshire.

The erection of 200 houses by the Middle Ward Committee of the County Council of Lanark in the Bellshill and Mossend district, and the consequent need which will arise for much larger school accommodation, were discussed at a recent meeting of the Bothwell School Board. County Councillor Joseph Sullivan (a member of the County Committee on Housing) reported that the situation demanded immediate action on the part of the Board. Within the last few days there had been a meeting in London with the Minister of Munitions, when the latter had asked the County Committee upon what conditions they would be prepared to go on with the erection of other 300 houses, bringing the total to 500 in the Bellshill and Mossend district. The Minister of Munitions had assured the committee further that there was no likelihood of the new and extensive works at Mossend being idle for a considerable time after the termination of the war. The Board, after expressing the liveliest satisfaction at the very favourable prospects of the district, continued the matter for further consideration.

Memorials to Athletes.

In memory of Lieut. Ronald W. Poulton Palmer, the famous Rugby football player, who was killed in Belgium nearly a year ago, a polished marble tablet has been erected in the parish church at St. Helens, Isle of Wight. It is inscribed: "In memory of Ronald, Lieut. R. W. P. Palmer, B.A., Rugby and Balliol, 1/4 Royal Berks Regt. (T.F.), younger son of Edward and Emily Poulton. Killed in the trenches in Belgium, May 5th, 1915. Age 25 years. An athletic leader of rare distinction, he was endowed with even greater gifts of love and joy. 'God is love.'" A brass tablet has been placed in the south chapel of the parish church of Henley-on-Thames in memory of Mr. H. T. Steward, who for so many years was prominently associated with amateur rowing. The memorial

bears the following inscription: "To the memory of Herbert Thomas Steward, Chairman of the Committee of Management of Henley Royal Regatta, President of Leander Club. Born November 9, 1838; died at Henley, September 9, 1915; buried at Bix, Oxon. This tablet was erected by some of his friends of Leander Club."

Despising Industry.

Sir Thomas Mackenzie, the High Commissioner for New Zealand, in the current issue of the "British Manufacturer," says: "What appears so singular to me about this country is that, although trade has largely made it, the one subject which, in certain circles, appears to be despised or regarded with indifference is trade, with which you are not supposed to have or have had the slightest connection. It is something of which many people are supposed to know nothing, and are not encouraged to know anything. That, surely, is an attitude which must change."

LEGAL.

Appeal Tribunals' Powers: Builder's Appeal.

May 2. King's Bench Division. Before Justices Coleridge, Rowlatt, and Sankey.

The Court heard arguments on a rule calling upon the Commandant of the Wyke Regis Camp to show cause against a rule nisi for *habeas corpus* directed to the Commandant to bring up the body of one Abbott, who was in that camp.

Mr. Branson, for the commandant, said Abbott was a man to whom the Military Service Act applied, and who, wishing to be exempted from its provisions, applied to the local tribunal at Bridport. One ground was that he was a conscientious objector to combatant service, and another was that he was indispensable in the business which he and his father carried on, that of a builder.

The local tribunal decided not to grant him any exemption on the ground of his conscience, but granted him exemption till June 30, in respect of his claim that he was indispensable in his business. From that decision the military representative appealed to the Appeal Tribunal, who decided in favour of the military representative. Abbott disobeyed the notice to join the forces and was arrested and fined 40s. and handed over to military custody.

Mr. Branson said the Act laid it down that the decision of the local tribunal should be the subject of an appeal, and, under these circumstances, counsel contended that the Order in Council gave the power which the Appeal Tribunal had exercised.

Mr. Rayner Goddard, for Abbott, argued that all that the Appeal Tribunal could deal with was procedure, and that they could not cancel or vary the local tribunal's decision. Certificates of exemption were entirely in the hands of the local tribunal.

The Court discharged the rule with costs. Mr. Justice Coleridge stated that, in the opinion of the Court, the decisions of the Appeal Tribunal were unaffected by the regulations. It seemed to his lordship that, inasmuch as the Appeal Tribunal neither granted, renewed, withdrew, nor varied the certificate, the regulations in regard to procedure did not apply, and that they had, therefore, perfect jurisdiction under the Statute to allow or dismiss the appeal. In allowing the appeal they were acting in accordance with the powers granted them by the Legislature.

Justices Rowlatt and Sankey agreed.

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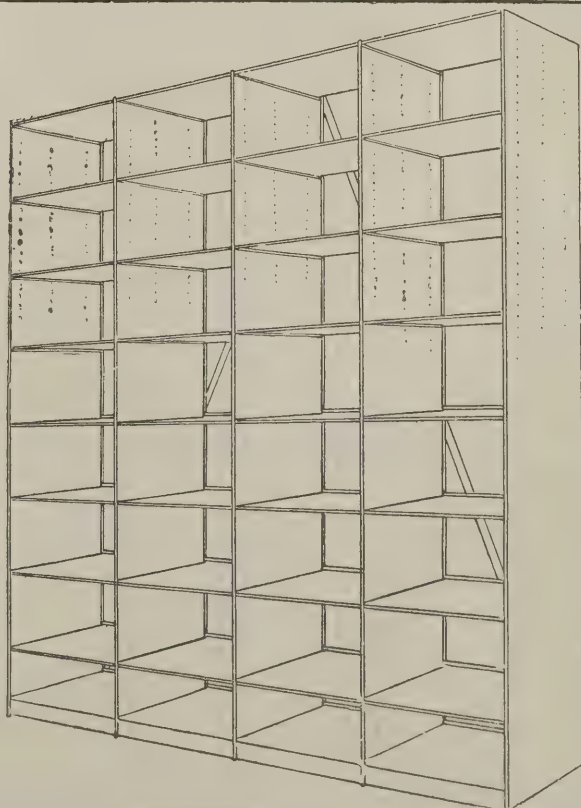
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MANCHESTER SOCIETY OF ARCHITECTS.

In the fifty-second annual report of the council of this society, it is shown that the aggregate membership is 272. The deaths are recorded of Mr. John Ely, hon. secretary from 1883 to 1891, and President in 1896-7 and 1897-8, and also a trustee; of the Right Hon. J. F. Cheetham, B.A., an honorary vice-president; and of Mr. G. Brown, Mr. R. Oldham, Mr. E. Cairns, and Mr. G. Higginbottom. Two members have given their lives in the country's cause—Mr. George Barlow (Associate), who was killed on the Gallipoli Peninsula, and Mr. C. R. Edwards (Student), who was killed in France.

It will be remembered that the Manchester City Council appointed a committee to enquire into the whole matter

of official architecture. A deputation from the society met this committee and placed before it an able argument for the engagement of practising architects for the erection of all public buildings. "Public buildings," it is contended, "should be the expression of the best architecture of the time; and in the organisation which will surely come at the conclusion of the war, we urge, in the highest interests of the community, that opportunity should be given by corporations for the best architectural services to be available. This can only be done by giving opportunities to practising architects of developing the best possible devices, both as regards plan and elevation, and of these being adopted. We ask that such arrangements may be made as will provide for it so as to bring a variety of independent trained thought to bear on all new public building problems. Architects in successful practice are ever desirous, and the exigencies of private practice require, that in all the buildings they design there should be a maximum of accommodation with the highest efficiency at a minimum cost. With them it is essential to watch closely new developments in planning, the use of materials and new forms of construction, in a manner almost impossible where purely administrative work must occupy the thoughts and mind." This argument was developed, and illustrated by a comparison of cost (generally, and without direct reference to Manchester) as between official and independent architecture, and the deputation was received very sympathetically, but no official reply had been received at the time of printing the society's report.

Mr. Thomas Groome Barker, a Fellow of the society, who died last year, left one

moiety of the residue of his estate for general purposes of the society, subject to the life interest of a relative. As the moiety of the estate has been left to Victoria University, towards the endowment fund of the Chair of Architecture, it appears that the whole of Mr. Barker's residuary estate will be devoted to the interests of architecture.

Members of the society who have, various capacities, joined the Forces have reached the total of seventy-nine. Those, as already noted, have been killed, about half a dozen have been wounded. The council is co-operating with the Architects' War Committee, to which it has rendered valuable assistance. Moreover, work has been found for two Manchester practitioners on a comprehensive regional survey of the South-East Lancashire district, the club-room of the society being used as a drawing-office.

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THE ARCHITECTS' & BUILDERS' JOURNAL.

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THE ANGLER: STATUETTE. P. G. BENTHAM, SCULPTOR.
(Royal Academy Exhibition, 1916.)

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EDITORIAL.

IN the specially contributed report (which appears on a later page of the present issue) on the York Town Planning Competition, there are a few preliminary observations that will be read with special attention. They bring into clear relief two important points—that town-planning schemes are mainly in the hands of engineering officials, and that when town-planning competitions are held it is nearly always an architect, or a landscape architect, who obtains the award. For engineers the obvious moral that self-interest would suggest is the discouragement of competitions. Corporations, architects, and the public, however, will draw the opposite inference. For our part, we have always recognised the desirability of co-operation between the two professions. But, unfortunately, while the architect freely acknowledges the engineering interest, the engineer seldom reciprocates. In all town-planning schemes, it becomes necessary, sooner or later, to obtain architectural advice, the value of which is seriously discounted if it is not sought until the scheme is considerably advanced. York has partly avoided this uneconomical error; although, as our contributor suggests, it is always best to procure outside aid in preparing the conditions, because intimate local knowledge has the defects of its qualities. It is a sound argument, but one that, we fear, local authorities will be slow to appreciate.

* * * *

Another point upon which it seems appropriate to lay some stress is that it is by architects, and not by engineers, that the town-planning idea has been made familiar. It is architects who have conceived and formulated its principles, collected its data from far and near, influenced its adoption, illustrated its amenities. Surely, therefore, it is unjust as well as unwise to take the matter out of their hands in 139 schemes out of 150. This is a matter in which, here and there, architectural societies are moving spasmodically and casually, but it is clearly one in which concerted action is necessary for the enlightenment of public bodies as well as of the public generally. It is not enough to have organised a great international congress, nor to have conducted emergency surveys. These efforts are soon forgotten; and, the public memory being so short, every proper and convenient means of jogging it should be taken. At the International Congress of Architects, held in London in 1906, Mr. Raymond Unwin said: "There is probably no more pressing need in this country at the present time than the introduction of order and artistic consideration in the planning and laying out of [residential] districts." But for the war, that would be as true to-day as it was ten years ago, and it is a truth that needs constant reiteration and enforcement.

* * * *

It was at the same congress that Mr. Reginald Blomfield delivered his memorable address on architec-

ture and craftsmanship, in which he disposed of some of the chief fallacies which beset the public mind with respect to the functions of the architect. Incidentally he hit upon one of the main sources of this misapprehension. "I have come to the conclusion," he said, "that architecture as the art of building did not enter into the serious consciousness of the Pre-Raphaelite Brotherhood and their successors. They never realised it as an art in itself; and they, with Mr. Ruskin, are to a large extent responsible for the failure of the public to recognise it as such." Mr. Holman Hunt, for example, "conceived of the whole business of architecture as an affair of decoration only; and we turned ourselves again face to face with that ingrained fallacy which was sedulously taught in the nineteenth century, and is at the root of half our difficulties at the present moment. It cannot be too often insisted on the present state of the public taste, that architecture is not mere decoration or ornamented building, but that it is something outside and beyond the various crafts which it calls into play." These are truths which municipalities have even now failed to grasp.

* * * *

We cannot resist quoting a further eloquent passage from Mr. Blomfield's address. "Architecture," he held, "is differentiated from craftsmanship or decoration, however beautiful, by its greater scope, by its sense it inspires of organic thought moving in orderly sequence through particulars to the total effect. It is only compare a fine architectural composition to so stately concerto of Bach. In both there is a deliberate restraint, the selection and interweaving of motives, the definite and consecutive construction which each detail falls into its place, and the masterly handling of these varied phrases so that they combine for one great effect. This, I believe, to the essential quality of architecture, the quality which alone justifies its claim to be the most intellectual of the arts." This aspect of architecture, he added, "formed no part of the Gothic revival, which concerned itself almost entirely with details, cusps and crockets, mouldings and tracery, tiles and vestments, and all other knicknacks and gewgaws of that preposterous anachronism." Of course, the temptation to lay undue stress on "gewgaws" is not confined to Gothic, which, however, lends itself with peculiar facility to this paltry vice. On the other hand, does not the reference to "organic thought moving in orderly sequence" lead on the mind a distinctly classical image?

* * * *

Mr. Thomas Ashby, Director of the British School at Rome, sends to "The Times" a very interesting account of a year's work. Excavation has not been brought to complete cessation by the war, and during the winter of 1914-15 some important discoveries were made. One of them is a very fine staircase connecting

the State apartments of the Domus Flavia with the aristyle of the central or residential part of the palace, and Mr. Ashby is moved thereby to conjecture that the Flavians, and especially Domitian, created over the whole extent of the Palatine hill "an imperial residence the like of which, though we can now but faintly picture its splendours, the world has probably never seen." He thinks that the brick-faced concrete building to the south of the temple of Castor and Pollux, hitherto considered "to be the temple of the supposed founder of the Empire as restored by Domitian," is in all probability a reconstruction of the entrance halls of this residence. A curious discovery at Ostia is a type of house from which the atrium is lacking, light being obtained from numerous windows opening on to streets or open areas. Such houses are divided into a number of apartments or flats, which are independent of each other and are approached directly from the street by separate flights of stairs! They comprise three or even four floors, and commonly have balconies, and in other ways anticipate, as Mr. Ashby says, many of the features of modern domestic architecture. His report, which fills more than two columns of "The Times Literary Supplement" of last Thursday, May 11, is certainly a valuable contribution to the stock of knowledge of Roman architecture, and students will be grateful to him for choosing to make use of an accessible medium of publicity rather than to bury the information in the archives.

Simplification of the transfer of land is a demand towards which generations of officials of all kinds have turned a deaf ear. Now the idea is everywhere finding favour. Last week we found York asking for legislation. Now we notice that the Town Clerk of Warrington has addressed a letter to the Finance and General Purposes Committee of Eastbourne Town Council asking the committee "to support a resolution passed by his Council to the effect that legislation is necessary to simplify and cheapen the transfer of land as to encourage the building of houses for the working classes, and that other corporations be requested to join in asking the Local Government Board, and Parliament, to receive a deputation on the subject." At Eastbourne the matter was debated at some length, and it was decided by seventeen votes to twelve to support the Warrington Council.

Most of the speakers were in agreement as to the desirability of cheapening and simplifying land transfer. It ought to be possible, one councillor said, for any working man to come to the Town Clerk with a vendor and say, "I am purchasing this piece of land. I wish you to register the purchase in the archives of the Town Hall." The only thing then to be done would be to affix the Government stamp. Another councillor remarked that, whereas the transfer of a piece of land worth £200 cost five or six guineas, the transfer of a motor-car worth £1,000 cost nothing, and that he heard of an instance of legal fees amounting to £5 for the transfer of a plot sold for £6. Another councillor, commenting on the motor-car comparison, reminded its author that in the case of land the investigation of title was necessary, as the land might be in possession of a fraudulent owner. So, indeed, might the motor-car, unless it were bought from the maker; but the risk is as remote in the one case as the other; nor does the present costly and cumbersome procedure wholly eliminate it. Nor is it the matter of fees that is the chief obstacle to freer dealing in real estate. Most people are more afraid of the mystic rites and ceremonies, the jargon and shibboleth, the vexatious and inexplicable delays, that make transfer so formidable an undertaking. To get rid of this rigmarole, complexity, and procrastination, will be difficult, because so many influential persons are fully interested in maintaining the established

procedure; but perquisite, privilege, and prerogative must yield to national necessity, and it seems pretty evident that our antiquated land system is toppling to its fall.

Mr. William Willett should have lived to see this day and rejoice. Yet, while wishing that he could have had the hour of triumph towards which he laboured so strenuously and persistently, we nevertheless feel that his work as a builder is vastly more admirable than his interference with the clock. We must confess, indeed, to a considerable measure of sympathy with the description of the Daylight Saving Bill as "fussy and tyrannical." If the member who said this in the House had added that the scheme is weak and childish, he would have remained secure of our suffrages; for is there not something rather contemptible in the mere untruthfulness involved in tampering with the meantime? To pretend it is six p.m. when it is only five, and thereupon to abandon work for leisure, may be an easy and an agreeable essay in self-deception, particularly when the hours are sunny; but, especially in the early autumn (which this year is to arrive one hour sooner than its wont), when the clock tells us that it is time to arise from our beds. Nature, corroborated by lifelong habit, will vehemently rebel: and as for the author of the Bill, there will be few to rise up and call him blessed. As for the stupendous economies that the change is to effect, we have not the smallest belief in them. The only economy likely to materialise is vicious: the economy of truth in making (at some considerable expense) all the clocks misrepresent the time more flagrantly than ever.

Mr. Thackeray Turner, chairman of the committee of the Society for the Protection of Ancient Buildings, appeals, somewhat tardily, "to the custodians of buildings where ancient glass remains, to protect it by boarding, or remove it, during the time that there may be danger from air raids." Boarding seems to be a rather feeble suggestion; but another gentleman, supporting Mr. Turner's appeal, proposes paper! He states that during the siege of Paris, in 1870-1, and in the subsequent war of the Commune, he noticed that windows generally were criss-crossed with strips of paper stuck upon the glass, and he declares that this method undoubtedly prevented much destruction of glass from concussion, which often affects a large area. He adds, naively, that the paper "is no defence against projectiles"—a testimony that (as the Americans used to say) "we smile to corroborate." Probably the exterior wirework with which so many stained glass windows are fitted would be at least equally effectual in breaking the force of concussion that was indirect or from a distant centre.

Somewhere in Scotland, a municipality has realised the folly of neglecting to engage an architect. Work that was estimated to cost about £300 has, it was declared, absorbed about fourfold that amount. A worse consequence was the unseemly wrangle that ensued. Now, the effects of employing an architect, like those of calling in a doctor, are moral as well as material. In either case, the mere presence is soothing, reassuring, and ameliorative. Possibly an architect could not have greatly reduced the expenditure on the work, but he could have prevented an over-sanguine estimate; and we feel quite sure that the sweetness and light invariably emanating from a bland professional presence would at least have prevented the harrowing incident of one burgess calling another a liar and a coward, or of any similar occasion for coffee and pistols (or, so far North, would it be whiskey and claymores?); for the architect always remembers the motto of his great forerunner, William of Wykeham—"Manners Makyth Man"; and his urbanity is contagious.

HERE AND THERE.

THOSE demarcation disputes in our English building trades have set us puzzling in the past over such riddles as "What is a slater: is he a tiler?" and "When is bricklaying plastering?" And now from America, as a sort of quiz to the serious yet glorious business of money-making in munitions of War, comes the question—Is a plumber an engineer? Certainly he is a very great man indeed. We might manage somehow without the carpenter, the joiner, the glazier, and the mason, because these are men concerned with the inert side of building; but it is a case of King's ransom for a plumber when the maid comes in to tell us that the water is trickling through the dining-room ceiling, or that there is dreadful escape of gas in the hall; for though the plumber was originally a worker in lead alone, and fashioned such pleasing things as fretted rainwater heads and pretty crestring, he has grown from that comparatively humble estate to Webster's definition of him as "an artisan who works in lead, zinc, tin, sheet metal, etc.; especially a tradesman who furnishes, fits, and repairs gas, water, and soil pipes, cisterns, tanks, baths, water-closets and their fittings, and other sanitary and fire-protection apparatus for a house or other building, including the junctions to the mains and sewers." A man who can do all these many things deserves much more to call himself an engineer than the engineer is entitled to call himself an architect because he has succeeded in putting up some particularly ill-shaped buildings besmeared with villainous ornament. Yet this does not appear to be a general opinion in America, where some caustic comment is made on the decision of the Indiana State Association of Master Plumbers to change its title to the Indiana Society of Sanitary Engineers. Thus, for instance, the "Engineering Record" of New York says: "With locomotive drivers going by the name of engineers, with plumbers posing as sanitary engineers, with business engineers and advertising engineers all about us, the term engineer promises to become as much abused as that of 'doctor' or 'professor.'"

It is the prefix that makes the difference. A man who can juggle with elements like water and gas, and is versed in all the niceties of drain lore, has very good reason to call himself a sanitary engineer, and neither the civil engineer nor the electrical engineer need complain of his engineering dignity being affected. Moreover, to-day we see the sanitary engineer working mightily behind the battle line—not that ex-plumber whom "Punch" showed to us recently, returning in the midst of the charge for the bayonet he had, by force of habit, left behind, but the soldier in the sanitary corps which looks after the water-supply, the drainage, the baths, and a hundred and one other things affecting the health of the Army: "At certain places near the line one sees a series of furnaces all made from old tins filled with clay, having air spaces between, which once lighted require next to no attention, but are eternally doing their work, like modern 'Valleys of Hinnom.' Water supplies are all the while being tested and retested by ambulatory laboratories. One sees everywhere the trail of their work in labels hanging to melancholy-looking taps, such as 'This water is not to be used until chlorinated.' It is at best a muddy fluid that serves for trench tea. Yet at the front there is less typhoid than measles. The happiest men we saw in France were in the baths close behind the trenches. In one converted dyeing factory 2,000 men got baths in a day. One saw batches of men rolling about in the huge vats filled with clean hot water, while their uniforms in super-heated steam chests and under heavy hot irons were being freed from the plague of trench vermin, and entirely new sets of well-aired underclothing were being put out for each man. The

splendid physique of the men, as one viewed these regiments *in statu naturæ* before they returned once more to the battle line, suggested the pathos of the preparations of the Spartans before their 'field of honour' at Thermopylæ." It is the sanitary engineer of the Army who provides all these comfortable and hygienic things, so let the Indiana plumbers, civilian members of a world fraternity, be happy in their new title, getting a little of the reflected glory from the other engineer.

Because of the proposal to add to its width, Charing Cross Bridge has lately got itself talked about a lot, and nobody can be found to say a good word for its ugly form; on the contrary, the occasion has been seized to hurl a host of epithets at the structure; it is a centipede bridge, which has managed to crawl across the Thames, and stands ungainly on its muddy legs; or it is a bridge that suggests "a kitchen fender supported on rather long salmon tins." And from the shower of hostile criticism of this soulless piece of engineering of the 'sixties which replaced Brunel's far more elegant suspension bridge I cannot forbear quoting a writer in the "Globe," who says he does not know whether there is an uglier bridge over a wide river anywhere. "If there is, and the information is forthcoming, I will keep away from it. There is only one possible explanation for the Charing Cross Railway Bridge as it is. Possibly the designers did not wish to 'show up' the Surrey side and the Shot Tower too much. Unfortunately they were too successful, too lenient to the Surrey shore. One result is that that shore remains unrepentantly reminiscent of Rogue Riderhood, and redolent of many other things. Perhaps, when the bridge is removed, the 'other side' will look at itself and be ashamed. . . . The bridge has no romance, and little history. It is just an awful example, and should be allowed to preach its silent lesson. It might form the background to some great national exhibition of railway relics and curiosities, and the youth of London might career along it at the rate of four miles an hour pulled by some ancient Rocket at a penny a time, the proceeds to be devoted to the education of the orphans of those who died of shock at first seeing it span the Thames. Or, by removal of the salmon tins here and there, it might be made into a merry switchback, and thus a joy for ever. . . ."

Last week there appeared in this journal extended particulars of the competition for memorial designs which the Civic Arts Association has instituted, and a very excellent competition it promises to be. But reading through the conditions of Class I., for a commemorative monument in the centre of the members' courtyard of the new London County Hall, I could not help staying at the sentence which said that "the donor of the prize desires that a cross shall form part of the design, and that the symbolism shall be religious." This donor, I fear, has put an unfortunate restriction on his gift, for one can hardly conceive the County Council courtyard to be redolent of any religious quality; it would suggest, rather, clauses in the Building Act, or the Thames steamboats, or the municipal milk supply, just as the bronze embellishments on the piers of the river wall of the building may be regarded as symbolic of the fat watch-chains that extend across the ample waistcoats of orthodox County Councillors. I can imagine a group of these representatives of the people gathered together in the courtyard, bespatted and be-cigared, expressing their views of the successful monument in a broad municipal manner; but I cannot conceive them to be in any sort of mood, in such surroundings, to appreciate the religious significance which this commemorative monument might have.

UBIQUE.

YORK TOWN PLANNING COMPETITION.

[SPECIALLY CONTRIBUTED.]

THE holding of a competition for outlining the development of land included in three town-planning schemes by the City of York brings forward again the important question of the relation between the architectural profession and official town-planning. A recent number of the admirable "Proceedings" of the Institute of Municipal and County Engineers contained a chart of the present state of town-planning schemes, compiled by Mr. J. W. Cockrill, the Borough Engineer of Yarmouth, which, it is to be hoped, has received due attention from the architectural profession. In making his inquiry as to the exact state of each town-planning scheme, Mr. Cockrill, who happens to be an architect as well as an engineer, asked the local authority in each case whether they had employed any professional assistance other than the Council's officials, and whether they had at any time invited a competition for the lay-out of the area or any part thereof. The answers show that out of about 150 schemes, covering over 250,000 acres, in five cases outside experts have been called in, and in six cases competitions have been held: this leaves 139 schemes out of 150 prepared by the officials of the Council; and it may safely be said that the number of cases in which these officials represent architectural, as well as engineering and surveying abilities, are very few. One other point may be noted: whereas from the above figures it is evident that town-planning at the moment is almost exclusively in the hands of engineering and surveying officials, if a competition is held, it is almost invariably won by an architect or landscape architect, though occasionally an architect is working in collaboration with a surveyor or engineer. This would suggest that architects have some contribution which they can bring towards the sum of abilities necessary to produce all-round town-planning.

As to the comparative merits of competition or consultant expert as a means of bringing in architectural advice, it is inopportune to discuss this while there is so little of either, and those who wish to see English town-planning as broad and comprehensive as possible would be disposed to welcome architectural co-operation by whatever means obtained. The City of York is therefore to be congratulated as being one of the few authorities which have thought fit to accept advice; nevertheless, we cannot refrain from pointing out that there are ways of making a competition more or less potent for good, and the York Council appears to have neglected some of the likeliest means of securing the most satisfactory results.

In the first place, the moment at which to hold the competition is a point of great importance in town-planning; it cannot be too clearly insisted upon that it is useless to ask outside experts to plan areas in detail without precise requirements to go upon. If, as in the case of York, there are large areas of unbuilt-upon land to be dealt with (in directions towards which the town may grow in the next thirty years), then the utmost a competition can do is to suggest some main lines of growth and possibly some *types* of detailed treatment. But we would go so far as to say that the mistake at York was to select three areas for three town-planning schemes under the Act, and go through the first stage of the procedure before holding the competition. By far the most useful results from a competition will be obtained if it is placed much *earlier* in the proceedings—before, indeed, any definite area for a scheme has been selected; to make it, in fact, a sort of prophetic vision of the growth of the town, including remodelling of the existing parts. It is true at York the competitors were allowed to "include observations" on the rest of the land surrounding the town, but the real use of an outsider is to come fresh

to a place, and, with a clear eye, which has not grown dim with use, point out its defects and make general suggestions for the future. A competition should therefore be a sort of preliminary report on the possible growth of a city, and it would only be *after* it had been held (or possibly one of the points required of the competition) that the separate areas for schemes under the Act would be scheduled.

The second complaint we have against the York competition is that an insufficiency of data was provided for the competitors. At whatever stage the competition be held, data should be carefully prepared and presented. One must always remember that many facts which the local official knows instinctively are wholly unknown to the competitor; a rough-and-ready land valuation plan, for example, is of the utmost use to anyone unfamiliar with a town. A property ownership plan for undeveloped areas is very helpful, and vital statistics and density figures are much more usable if they have been rendered graphic. In a word, some sort of civic survey should have been prepared and be accessible to competitors either by reproduction or in a local exhibition (to be visited at the same time as the site). This preliminary survey was, we remember, strikingly absent from the great Dublin competition, held eighteen months ago and still, by the way, unassessed, if the drawings are not by this time destroyed! It is ridiculous to expect competitors to make their own civic surveys.

Lastly, we would point out that if you are going to have an assessor who is of any use, you may as well make the very best use of him; that is to say, let him draw up the conditions and deal with the answers to questions—of course, in close consultation with the promoters. In this case, the assessor, Professor Abercrombie, was only called in after the designs were submitted, and we feel sure that some of the clauses in the conditions would have been modified under his control, and a certain quality of baldness would have been avoided.

After making these preliminary cavils, we are prepared to congratulate the City of York on having initiated this competition and also on having obtained, in spite of these shortcomings, several designs which should be of use in carrying the schemes into execution. Of the fifteen sets of plans sent in, the assessor awarded the first premium of £100 to Mr. Reginald Dann, of Crawley, Sussex; the second of £50 to Mr. M. A. Piercy, of Warrington; the third, £25, to Messrs. Burroughs and Stephen, of Liverpool and Chester. The set submitted by Messrs. Allen Thompson and Thorp, of London, was singled out for honourable mention, largely, it would seem, by reason of its admirable method of representation. Indeed, it was unfortunate that the first premiated plans were not shown by particularly attractive drawings, nor was the report enriched by the numerous diagrammatic aids to realisation which formed so notable a feature of Messrs. Allen Thompson and Thorp's report.

But, notwithstanding an evident hastiness of execution, Mr. Dann's plan would appear to deal in a much more easy, confident, and suggestive manner with the future growth of York to the north and east than any of the others. He discovers a much more familiar appreciation of the possibilities of the site, the utilisation of existing features, and a development harmonious to ownership than do most of the other competitors. Several of the latter were apparently so cursorily acquainted with York that in their suggested central improvements they ignored a new street which has recently been formed, showing in its place needless alternatives, and on one plan the Derwent light railway was evidently thought to be merely a project,

seeing that its direction was altered in order to work in with an ornamental park strip.

The premiated designs are reproduced on our plates this week, and can be there studied.

It is impossible, without large scale and coloured reproductions before us, to go in any detail into the complexities of a town-planning competition, but we should like to say a word or two upon what we consider the three most important features of it—main roads, open spaces, and neighbourhood centres. We select these three for comment in preference to the other aspects, such as limitation of houses per acre and delegation of areas for manufacturing purposes, not because we think the two latter less important, but because they are of less interest in this particular case and do not show up the merits and faults of the designs so conspicuously as do the other three.

With regard to main roads, it must be remembered that the City Engineer indicated on the plan given to competitors a tentative ring road, and a close inspection of the designs submitted leads one to agree that these original suggestions could not well be bettered. The third premiated, it is true, modifies them very considerably, and puts forward a double ring. This is one of those suggestions which it will be of value to the committee to have before it in carrying out the town-planning schemes. But the line adopted by the first appears to be the logical solution, particularly in its relation to the crossing of the Ouse at Water End, which latter is admirably handled in the style of a true landscape architect.

York is already astonishingly well provided with open spaces for future growth in the form of the Strays and Ings that radiate from the built-up limits of the city. Two of these, Bootham Stray and Monk Stray, separate the three areas included as town-planning schemes. Mr. Dann rightly elaborates this wedge-shaped radiating park system, adding narrow parkways along the Osbalwick Beck and Tang Hall Beck, and relying upon boulevards for circumferential connection. Messrs. Allen Thompson and Thorp go to the furthest opposite extreme in recommending an immense circumferential park on the N.E.; and Mr. Piercy makes an unnecessary parked fuss of the Derwent Valley Railway.

The neighbourhood centres, or grouping of buildings as nuclei of different areas, produced most variety of treatment. And it was here, we felt, that the solution of three definite areas proved a snare to many competitors. Seeing the areas naturally separated and of huge extent, the tendency was to treat them as large units for pieces of formal planning. Messrs. Burroughs and Stephen and Messrs. Allen Thompson and Thorp, led away by this, produced colossal central features more suitable to a World's Fair than to the future growth of an old cathedral city. Mr. Dann again scored in this, his centres appearing to form themselves naturally, without being unduly laboured, but, at the same time, being extremely well designed.

Of the other schemes sent in we should have liked the assessor to have commended that of Mr. E. W. Turner, of Birmingham, which in many respects we prefer to the second premiated, which it somewhat resembles in its general air of efficiency. Mr. Piercy's plan, indeed, we were not especially taken with, particularly from the artistic point of view; but he had evidently studied his subject very thoroughly. As regards suggestiveness in detailed planning, the first and third (the latter in spite of bombast) will prove the most useful.

There can be no doubt that Mr. Dann's plan exhibits the most capable hand among the competitors, and we cannot do better for the future of the beautiful City of York than recommend that when the normal growth along town-planning lines begins, Mr. Dann shall be engaged in an advisory capacity to ensure its health, convenience, and beauty.

THE BIBLIOTHÈQUE STE. GENEVIÈVE, PARIS.

BY O. BRYANT NEWBOLD.

THE site on which the present Bibliothèque Sainte Geneviève is built was in the seventeenth century occupied by the Abbey of Sainte Geneviève, which later became utilised for the Ecole Centrale du Panthéon, since called successively the Lycée Napoléon and the Collège Henri IV.

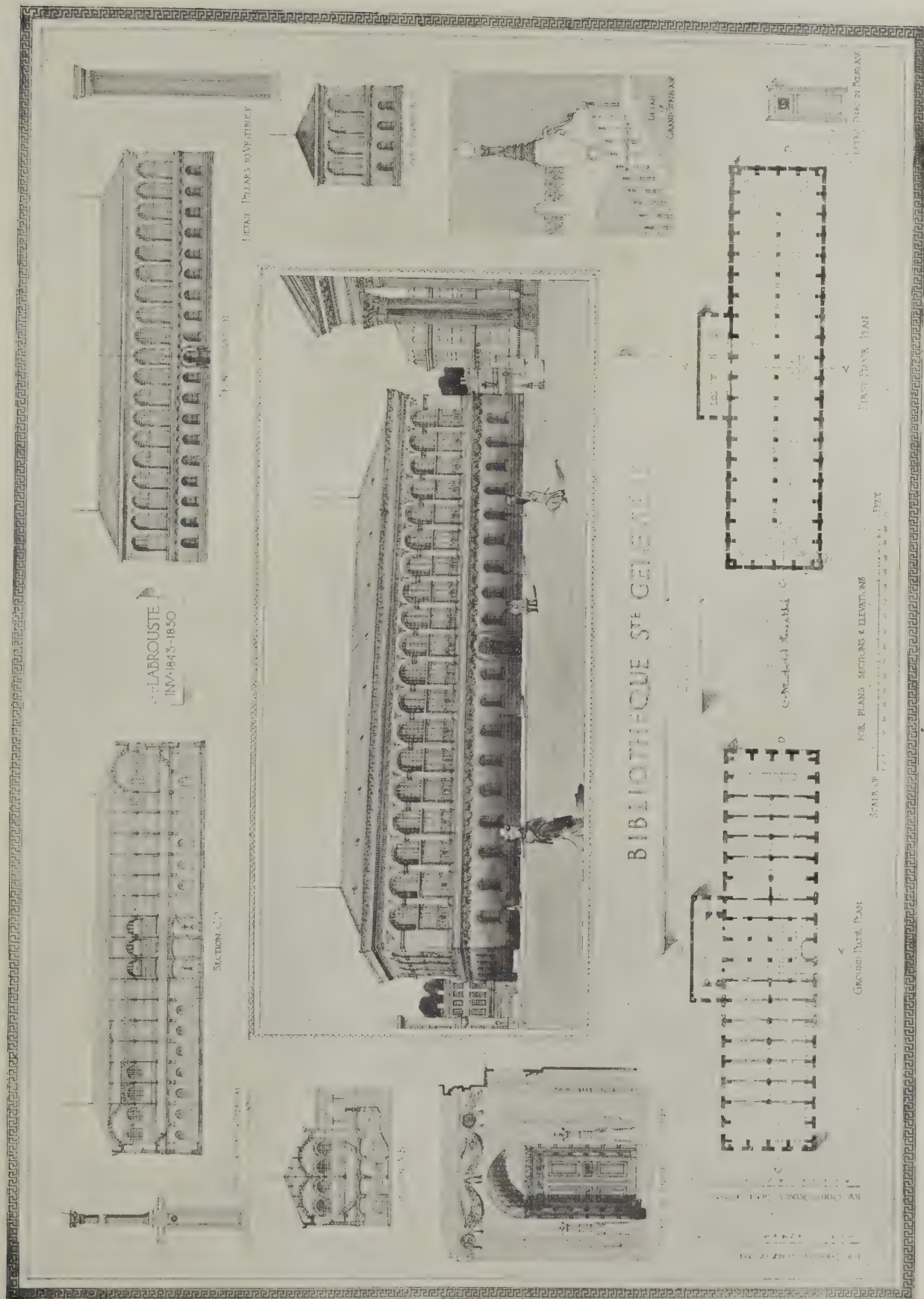
The Library was erected in 1843-50 from designs by Henri Labrouste, and is constructed entirely of fire-resisting materials. The ground floor is vaulted in stone, the façades are of stone, and the other walls are of rubble masonry. Steel trusses have been employed in the roof framing, whilst the roof covering is of zinc. The main entrance doorway is in bronze. On the façades are carved the names of the most celebrated authors of all nations from ancient times down to the nineteenth century. The entrance hall is decorated with the paintings of M. Degoffe and with busts by MM. Elsdoot Merlieux and Malet. Connected with the Library are an administration building, on the other side of the Rue des Sept Voix, and a building at the entrance to the Collège de Sainte-Barbe, adjacent. The cost of the Library itself was £59,800 (or about 2s. 3d. per ft. cube), the administration building £5,200, and the land £6,000, making the total £71,000.

The reading room on the first floor has accommodation for about 420 readers.

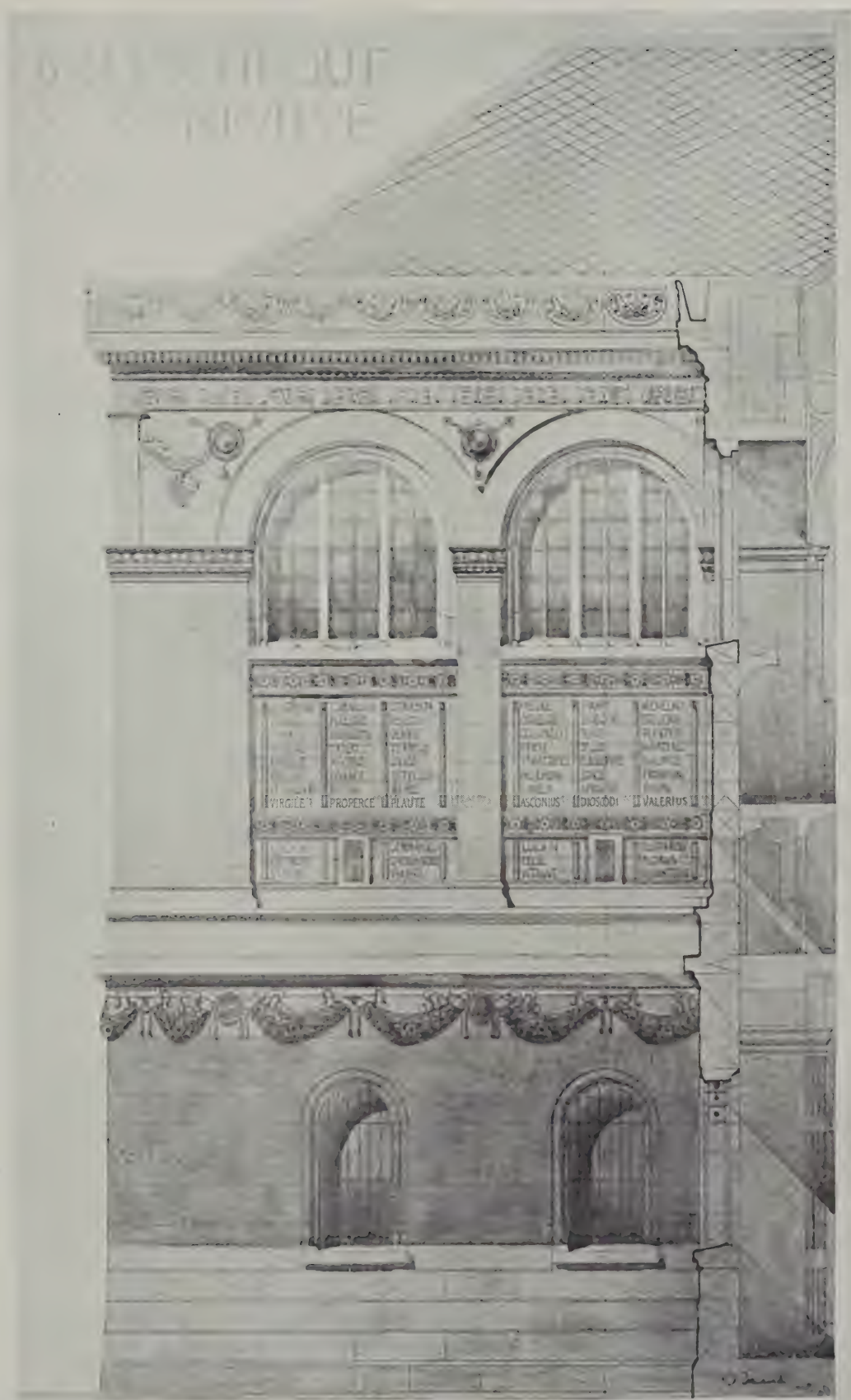
Proceeding from these facts to an analysis of the design, it is well first to bear in mind its classification as an architectural work. It belongs to the library type, which by tradition takes the form of a long, low, simple façade such as the Library of St. Mark, Venice. The Boston Public Library and numerous other American examples have since been modelled on it, and as a building of this type does not call for much combination in the elements of composition, such flights of imagination as are seen in Poëllart's magnificent pile, the Palais de Justice at Brussels, are impossible. Therefore, although the Bibliothèque Ste. Geneviève is one of the best examples of its class, it belongs to a class which does not involve the artist in complex problems of composition, and so facilitates his reaching the summit of architectural design.

Taking truth of expression as a first essential in architecture, we find Labrouste's great building to be satisfactory, inasmuch as it would be difficult to mistake it for anything but a library. Moreover, the disposition of the horizontal and vertical lines, and every detail of the exterior, is based entirely on fact; the plinth course, for instance, is expressive of the first-floor level, the height of which, 21 ft., was so arranged because it gave suitable cubical contents to the rooms formed by the subdivision of the ground floor. The band in the panel just above expresses the subsidiary gallery floor, 7 ft. 6 in. above the main floor, placed just high enough for the attendant to be able to walk under. The window-sill level is governed by the height of the bookcases placed on this subsidiary gallery. The imposts indicate the internal buttresses or piers taking the thrust of the roof trusses. The roof truss and the window head, both semi-circular in form, spring from the same level, the former being a multiple of the latter; whilst the placing of a subsidiary truss on top of the semi-circular iron truss gives us the approximate gutter level, which Labrouste has interpreted into a beautiful cresting. But the use of iron in narrow widths to form semi-circular roof trusses, and the subdivision of the width of the building into two equal halves, are both questionable points in the design. Apart from these, however, Truth is written over the whole façade.

With regard to the quality of strength, Labrouste's building actually is not only constructionally sound,



STUDENTS' DRAWINGS (SERIES II.). XXIII.—BIBLIOTHÈQUE STE. GENEVIEVE, PARIS. LABROUSTE, ARCHITECT.
MEASURED AND DRAWN BY O. NEWBOLD.



HALF-INCH DETAIL

STUDENTS' DRAWINGS (SERIES II.). XXIV.—BIBLIOTHÈQUE STE. GENEVIEVE, PARIS: DETAIL OF FAÇADE.

MEASURED AND DRAWN BY O. NEWBOLD.



STUDENTS' DRAWINGS (SERIES II.). XXV.—BIBLIOTHÈQUE STE. GENEVIEVE, PARIS: DETAIL OF CORNICE.
MEASURED BY E. N. FRANKLAND BELL. DRAWN BY O. NEWBOLD.



SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.). XXXIV.—PORCH, STONE HOUSE, LEWISHAM, LONDON, S.E.



Second-Premiated Plan. By M. A. Piercy.



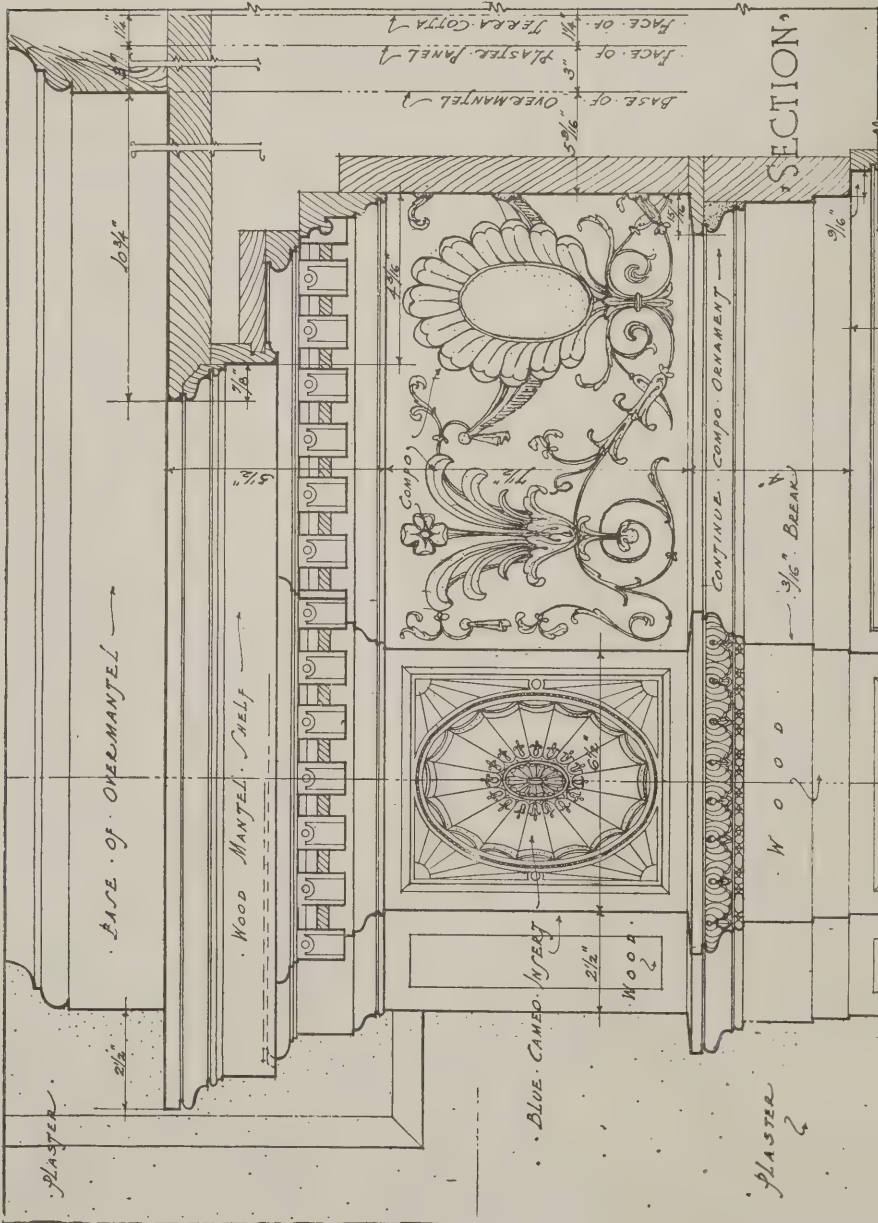
First-Premiated Plan. By R. Dann.

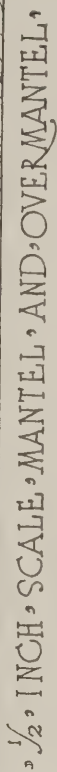
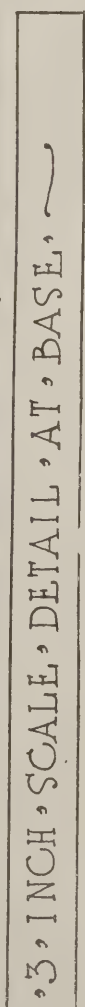


Third-Premiated Plan. By H. Burroughs and N. Stephen.



Plan awarded Hon. Mention. By Allen Thompson and Thorp.





MODERN AMERICAN ARCHITECTURE. XLIX - CHIMNEYPiece IN MAYOR'S RECEPTION ROOM, MUNICIPAL BUILDING, HARTFORD, CONNECTICUT.

DAVIS AND BROOKS, ARCHITECTS.

but has the appearance of being so, and this appearance, moreover, is no deception, relying for its effect on simple statements of fact. Thus, the ground-floor wall, being thicker than the first-floor wall, is indexed by the depth of shadow on the ground-floor windows, as compared with the depths of shadow on the first-floor windows. The ornamental boltheads give the feeling of tying in some important constructive feature, which is a function they actually do perform, and other similar instances might be given to prove that the quality of strength is apparent not only to satisfy the æsthetic sense, but also to satisfy the scientific sense.

As regards detail, one glance at the ornament (and the contour of the mouldings) is sufficient to assure us that Labrouste has almost attained to the vitality, restraint, and refinement of the Greeks. His ornament is original, delicate, and graceful.

The repose of the building is most impressive. The heavy, yet delicately profiled cornice gives weight and finality to the façade, whilst breadth has been obtained by the happy elimination of unnecessary ornamental breaks, set-backs, broken pediments, or other additional features, and by a uniformity without such monotony of detail as is discernible in the Panthéon.

Scale has been imparted by the placing of well-designed street lamp standards of average height in close proximity to the building.

The general proportion of the Library is excellent, and the bold, deep shadows cast by the entrance doorway—the focal point of interest—and by the ground-floor windows, where the effect of depth is most desirable, enhanced by the delicate play of sparkling shadows cast by the carefully coloured mouldings, which are the more delicate and graceful the higher their position on the façade, all show profound study of the quality of light and shade.

A beautiful mixture of colour is imparted to the building by the employment of courses of stone of varying depths of grey, to be seen in the alternation from light to dark between the base of the building and the string-course, or from the sub-base of the impost to the window sill, or between the tænia mould and the fascia of the frieze.

Coming next to the factor of unity, the true test of which is whether or not it is possible to take away any single feature without dislocating the composition, we discover that the design is evolved by the multiplication of one constructive unit which has been absolutely perfected in plan, section, and elevation—a unit of three dimensions. The building consists of seventy-six units of 14 ft. 3 in. by 14 ft. 3 in. by about 63 ft., the depth being comprised by four units and the width by nineteen units. The entrance hall is central and consists of twelve units, and the rooms on either side are multiples of either four or eight divisions.

This unit system accords with the various essential principles and qualities, and it has been obtained, not by any architectural trickery or striving after effect, but by the natural interpretation of constructive necessities into æsthetic form. The rest of the building, then, being merely a repetition of a perfect unit, it would be impossible to take away any detail without destroying the unity of the building.

Yet it must be admitted that the repetition of one complete bay throughout the façade, excellent as it is for the purpose of imparting monumental character, has been rather overdone, for though in the case of a round or oval building, like the Coliseum, or Mr. Guy Lowell's recent design for the New York Court House, no more than one bay at a time presents a similar appearance to its neighbour; a long low façade needs to be treated so that it gives a sense of termination rather than continuity. Labrouste clearly was unhappy in this latter respect, as well as in his roof-truss design and his staircase planning, but he nevertheless produced a building which stands the tests of criticism to a very high degree.

Appended are a few biographical particulars of the architect:—

Pierre François Henri Labrouste, member of the Institut de France, was born on May 11, 1801. He studied at the Collège de Sainte-Barbe, and afterwards entered the ateliers of Vaudoyer and Hipp. In 1819 he entered the Ecole des Beaux-Arts, where he won the second architectural prize in 1821, the departmental prize in 1823, and the Grand Prix in 1824, the subject for the last-named being "A Court of Appeal." In 1829, after his return from Rome, where his study was marked by the preparation of nine designs (or restorations) of the Temple of Neptune at Paestum, he was in charge as inspector of works at the new Palais des Beaux-Arts. In 1838 he was chosen as architect for the Bibliothèque Sainte Geneviève, and in 1840 was entrusted with the organisation of Napoleon the First's funeral. In 1843 he began the Library, which was completed in six years, and in the construction of which he was one of the first to use a steel roof with success.

During this period he obtained, as the result of a double competition (1837-1840), the execution of the works of the Hospital at Lausanne and the Cellular Prison at Alexandria. He designed also the Preparatory College of Sainte Barbe des Champs at Fontenay-aux-Roses. In 1848 Labrouste was elected to the Council formed for improving the manufactures of Sèvres and of Gobelins, and was given the task of designing the interior of the buildings erected for the funeral of the Victims of June, the designs for which buildings were exhibited at the Salon of 1849. In 1854 he was elected to the Committee of Civil Buildings. In 1855 he succeeded Visconti on the buildings of the Imperial Library, and continued their reconstruction, as well as a Dépôt des Marbes. In 1867 he was elected a member of the Académie des Beaux-Arts in place of Hittorff. He obtained at the Universal Exhibition of 1855 a medal in the first class, and his work of 1829 at Rome on the Temple of Neptune was then exhibited. He had previously received a gold medal at the Concours de Versailles in 1842. He was decorated in 1841, and received the cross of *officier* of the Legion of Honour in January, 1852. He died at Fontainebleau on June 26, 1878.

THE PLATES.

Bibliothèque Ste. Geneviève, Paris.

LABROUSTE'S great building is critically described in the article immediately preceding. A photograph of the principal façade was given as a double-page plate in our issue for April 2, 1913. Mr. Newbold, whose drawings we now reproduce, is a student of the Liverpool School of Architecture.

Stone House, Lewisham.

This is an early example in England of the type of porch which distinguishes "Colonial" architecture in America. It is bold in its general design, but not in any sense bald, the central panel with bas-reliefs on the frieze, the lions' heads, and the enrichment on the capitals serving to relieve the whole. A general view of the house will appear next week.

York Housing and Town-planning Scheme.

These designs are dealt with in the article on the competition, on page 205.

Chimney-piece, Municipal Building, Hartford.

From the admirable detail drawing, which we reproduce from our contemporary, "Architecture," of New York, it will be seen that the character of eighteenth-century work is assimilated in this design, and the result is very pleasing. A general view of the room in which the chimney-piece is set was given as a plate in our issue for April 5.

R.I.B.A. RECORD OF HONOUR.

The "Journal of the Royal Institute of British Architects" prints, in its issue of May 6, its twenty-eighth list in the "Record of Honour":

Killed in Action.

Bausor, Thomas Paul, Associate, 2nd Lieutenant, Shropshire Light Infantry. Killed in action in France on April 6.

Second Lieutenant Thomas P. Bausor was the son of Mr. Paul Bausor, of Lark Hall, Fordham, Ely, a retired architect. He served his articles with his father, then practising in Cambridge. He was afterwards for a time architectural assistant under the Herefordshire County Council, and later architectural assistant in the Small Holdings Department of the West Riding County Council. He passed the qualifying examination and was elected Associate of the Institute in 1912. Joining the Hereford Regiment almost at the commencement of the war, he later secured a commission in the Shropshire Light Infantry. He went to France at the beginning of the present year. Mr. T. V. Steele, his immediate chief under the West Riding County Council, pays a tribute to the ability of the late officer and says: "I personally feel that I have lost an invaluable helper and friend."

His young widow writes: "My husband was attached to a trench mortar battery. I have received a letter from a brother officer who told me he had been doing fine work, controlling and steadying the fire of men new to the trenches—work he did voluntarily in a dangerous spot as his own battery was not firing—and that was where he met his death. . . . His loss is a very great and real one to me, but I am proud to have been the wife of so gallant a soldier."

Mackenzie, Gilbert Marshall, B.A. Cantab., Associate, Captain, Seaforth Highlanders. Killed in action in Mesopotamia on April 21. Aged twenty-five.

Captain Mackenzie was the youngest son of Dr. Marshall Mackenzie, A.R.S.A., F., and brother of Mr. Alexander G. R. Mackenzie, F., the new President of the Architectural Association, who was severely wounded in the memorable charge of the London Scottish at the first battle of Ypres, and had eventually to undergo amputation of the leg. Captain Mackenzie was educated at Charterhouse and Cambridge. He was registered a Student of the Institute in 1912, and passed the Final Examination and was elected Associate in 1913. He was one of the partners in the firm of Messrs. Alexander Mackenzie and Sons, practising in the London office. He was in the Special Reserve of the Seaforth Highlanders before the war, was with the British Expeditionary Force through the retreat from Mons, and was wounded at Ypres in May, 1915. He subsequently went out with the Mesopotamian Relief Force, and met his death on Good Friday in one of the last desperate engagements before the fall of Kut.

Bucknill, John Charles, 2nd Lieutenant, Hampshire Regiment. Previously reported missing, now officially reported killed on January 21.

Second-Lieutenant Bucknill was the son of Lieut.-Colonel John Townsend Bucknill, R.E., of Thornfield, Bitterne, and grandson of Sir John Charles Bucknill, F.R.S. He was educated at Wellington College, and went to Emmanuel College, Cambridge, where he took his B.A., and became an architect. He had been a member of the Architectural Association

since 1901. During the operations described in despatches published on April 6, the Hampshire Regiment earned distinction, especially at Nasreh, where Lieutenant Bucknill and four others were the only officers of the battalion to get through unwounded. For his services in these operations he was "mentioned in despatches."

Reported Missing.

Skipwith, Frank Peyton, Licentiate, Major, Royal Scots Fusiliers, was reported missing on September 25 last, and no news has been received of him since.

Major Skipwith was in practice with Messrs. J. S. Gibson, F., and Walter S. R. Gordon, Licentiate, at No. 5, Old Bond Street, W.

Award for Special Work.

Arthur J. Maurice, Licentiate, Lieut.-Colonel, Royal Engineers, T. Awarded the D.S.O. for special work in the trenches before Richeburg.

Lieut.-Colonel J. Maurice Arthur joined the British Expeditionary Force with the First Lowland Field Company in 1914, his unit being the first Territorial R.E. Field Company to join the Expeditionary Force. He was with his unit from December, 1914, to November, 1915, when he was appointed Lieut.-Colonel.

Serving with the Forces.

The following is the Twenty-eighth List of Members, Licentiates, and Students R.I.B.A. serving with the Forces, the total to date being 59 Fellows, 434 Associates, 233 Licentiates, and 273 Students:

FELLOWS.

Carless, William: Artists' Rifles.
Kirkby, R. G.: 10/12 Officers' Cadet Bn.

ASSOCIATES.

Dickman, H. A.: Artists' Rifles.
Holland, P. Estcourt: Captain, Supply Officer, attached 1st Army, B.E.F. France.
Mellor, W. Law: Manchester University O.T.C.
Morley, Francis: 2nd London Sanitary Co., R.A.M.C. (T.).
Rogers, John C.: R.N.A.S.
Schooing, Stanley P.: R.N.V.R., Anti-Aircraft.
Ware, Vivian: Artists' O.T.C.

LICENTIATES.

Creighton, H. R.: Artists' Rifles.
Haslock, W. E.: Royal Engineers.
Hookway, G. J. F.: 2/1st Cambridge Regt.
Stevens, Edgar: R.A.M.C.

STUDENT.

Whitehead, Percy: 3/5 Bn. West Riding Regt.

Promotions.

Lieut. L. M. Yetts, B.A. Cantab., A., has been promoted Captain, 1/5th Queen's Royal West Surreys.

Major J. Maurice Arthur, D.S.O., Licentiate, of Airdrie, has been promoted Lieut.-Colonel, Royal Engineers.

A Gallant Derbyshire Architect.

Second-Lieutenant R. F. Wagstaff, Leicester Regiment, third son of Mr. W. H. Wagstaff, architect and surveyor, of Chesterfield, has been wounded, a piece of shrapnel striking the point of his hip and lodging finally in his ribs. He was in charge of a detached post, and although wounded he gallantly stuck to his position until relieved at night, when, under cover

of darkness, he walked unaided to the dressing station. Aged twenty-nine, he was educated at Chesterfield Grammar School and Bourne College, Birmingham. He served his articles as an auctioneer to the late Mr. Cox, of Mansfield, but afterwards became an architect, and superintended the construction of the mining villages of Brodsworth and Bullcroft. Originally, he joined the Sheffield City Battalion, and on receiving his commission was transferred to the Leicesters.

THE NAME "COLDHARBOUR."

In connection with the name "Coldharbour," which occurs in a recent issue on plate xxxiii. of our second series of Small Houses of the Late Georgian Period, it is interesting to read the following letter which has been addressed to the "City Press" by Mr. J. Landfear Lucas. "Coldharbour Lane," Brixton, derives its name, we had always understood, from an ancient refuge from the cold into which weather-worn travellers might enter, but to this alleged origin of the name Mr. Lucas pays but little heed. The main point is that "Cold" and "Coal" are in conflict.

By the courtesy of Sir Thomas Sutherland and Lady Sutherland (Mr. Lucas writes), I have received from their residence at Coldharbour Wood, East Liss, a very interesting volume, giving extracts from "Notes and Queries," ranging over the years 1849 to 1887, as to the origin of the place-name of Coldharbour. Among many other examples, it applied to an ancient mansion in Dowgate Ward, the residence of Tunstall, Bishop of Durham, in the reign of Henry VIII. Then probably it obtained the privileges of a sanctuary (small tenements afterwards built on the spot let well, being a protection to persons in debt). It was pulled down by Earl Gilbert about 1600. At an earlier period, in a grant of Henry IV., it is called: "Quoddam hospicium sive placeam vocatum le Cold Herbergh." The proper name "Coldharbour" was, no doubt, brought over to England by our Saxon ancestors, for Germany has also examples of the name to this day. Near Aix-la-Chapelle is a village called Kalterherberg, in Baden is another, and near Lorrach is a third. Its origin is disputed, and the meanings range from a chilly place of shelter, and a charcoal burners' store, to a station of the Roman serpent standard, or a place near a snake-like turn in a Roman road, from coluber, or colubris—a snake. Where so much is uncertain, it is delightful to find a lady not troubled with any doubts. Miss Strickland, in her work on "The Lives of the Queens of England," speaks of the old palace in Dowgate, where, she says, Lady Margaret Douglas, Countess of Lennox, was imprisoned by Queen Elizabeth. She remarks: "There were two places belonging to the Crown which claimed this name of Cold or Coleharbour, both situated on little harbour creeks of the demesne, where, doubtless, crafts of coals put in for the supply of the Metropolis. The eastern Coalharbour was situated on the spot where now is the West India Dock Basin. The other, built by a citizen, is best known; and All Hallows' Church, Thames Street, was, in Stowe's time, originally part of its gateway." On the Atlantic coast of Nova Scotia is a Coleharbour, locally noted by the lines:

"Some say the devil's dead, and buried in Coleharbour,
Some say he's rose again, and 'prenticed to a barber."

LEGAL.

Builders' Claim of £97,000: The New Local Government Board's Offices.*Spencer Santo and Co., Ltd., v. The Commissioners of H.M.'s Works and Public Buildings.*

May 8-10. Official Referee's Court. Before Mr. Pollock.

This was an action by Spencer Santo and Co., Ltd., builders, claiming £97,109 as balance of charges under a contract with defendants for erecting the new Local Government Board Offices at Whitehall. The hearing is expected to occupy several weeks.

Mr. Holman Gregory, K.C., Mr. Compston, K.C., and Mr. Inman appeared for the plaintiffs, and Sir R. Acland, K.C., Mr. Lowenthal, and Mr. Given for the defendants.

Mr. Holman Gregory, K.C., in the course of a lengthy detailed opening for the plaintiffs, said that by a contract in writing dated April 14, 1902, the plaintiffs undertook for a sum of £473,000 to build and complete certain public offices at Westminster, and they now claimed for balance of the price of work done and materials supplied in the erection of those buildings, which were situate at the corners of Parliament Street, Charles Street, and Great George Street, a work which extended over a period of five years. The plaintiffs entered into a contract to erect the buildings in accordance with eighty-two drawings which had been prepared by the architect, named Brydon, but, in fact, they were called upon to erect a building which was entirely different from the original drawings; no one of the plans or drawings was conformed to with the exception of one which related to the fire hydrants. The building as erected was quite different from that provided for by the contract. The only thing that was the same was the outside elevation. In appearance it was the same building, but in fact it was quite a different building. After the contract was signed other plans were given to the builders to build to, which provided work to be done which was of an absolutely different character from that provided for by the contract. The building, so far as the internal arrangements were concerned, was not the same. The plaintiffs made their preparations to erect the building, but before they commenced changes were made, and from time to time further changes were made, until in the result the whole structural character of the building was altered. From time to time the plaintiffs were supplied with fresh drawings in place of the contract drawings, as well as with fresh instructions. The plaintiffs duly completed the building in accordance with the fresh drawings and instructions, but the changes and reductions in the different parts of the building made the materials and work, particularly the masonry, brickwork, and steel work, far more expensive in proportion than they would have been in a building constructed according to the contract documents. Another storey was added to the building, and by a process of what was called "skinning the work" the builders were told to put up this other storey and were told that they were entitled to £406,000 instead of the £473,000, although in fact they had expended upon the building much more than the contract sum, caused to a great extent by reason of the altered character of the building put up. Plaintiffs also alleged a breach of

contract in respect of the supply of Portland stone. It was provided by the contract that the plaintiffs were to obtain the Portland stone required for the work from the Bath Stone Firms, Ltd., with whom, as stated in the contract, the defendants had entered into a contract for the supply of the stone. In order that the stone supplied might be of proper quality it was provided that representatives of the defendants should inspect the blocks of stone required previous to their being stacked for the plaintiffs' exclusive use in the works and that the requisite quantity of stone to meet the plaintiffs' requirements would be at all times ready in the stacks and that no delay should occur in the delivery of the stone when ordered. It was alleged that the defendants had failed to carry out these conditions and that consequently the plaintiffs were hampered and delayed in carrying out the work. Further, it was alleged that the defendants wrongfully purported to exercise their power in the contract provided of omitting work for the purpose, not of omission, but in order to give such work, or work substituted for it, to other contractors, and extra work which ought to have been ordered of the plaintiffs was given to other contractors, for which the plaintiffs claimed a fair and reasonable price. The plaintiff company was a well-known building firm, registered as a company in 1898. They had a large working capital, and up to the time of this contract were in an exceedingly flourishing condition. Unfortunately, in consequence of what had happened during the erection of these buildings, they were not in 1910 in such a successful position, and in 1911 an order was made to wind them up, and the present action was being brought under an order of the Court on behalf of the debenture-holders. The buildings erected by the plaintiffs, and in respect of which they were claiming, had a frontage of 600 ft. in Charles Street, 300 ft. in Parliament Street, and 250 ft. in Great George Street, and provision was made for lighting and ventilation of three large courts and ten smaller ones inside. Before November, 1901, Mr. Brydon, the architect, died, and the plaintiffs alleged that they were greatly delayed and the works were disorganised by the non-supply and delay in supply of instructions, drawings, and details, and by the failure of the defendants to order and their delay in ordering goods and work to be supplied, and by failure to select and supply materials for the work and by supplying materials of an inferior character. Under the plans and drawings it was contemplated that in the proposed building there should be six floors, three below the ground level and three above, that the main part of the building should be of brick and that all joists and other details of that kind should be of steel. The defendants covenanted that the architect would from time to time certify the sums to which the plaintiffs were entitled under the contract, but plaintiffs' counsel alleged that he never did so certify, and that the sum paid to the plaintiffs was far short of the sum to which they were entitled.

In the course of his speech, which occupied three days, counsel incidentally mentioned, in relation to the plaintiffs' complaint of alterations, that during the progress of the work there were no fewer than 436 separate and distinct variations in the plans and drawings, and in many instances there were variations upon variations.

The hearing was adjourned.

SOCIETIES AND INSTITUTIONS.

Exeter Diocesan Architectural and Archaeological Society.

Exeter Diocesan Architectural and Archaeological Society's annual meeting was held last week, Sir Robert Newman presiding.

The report stated that an effort had been made in the direction of affiliation with the Devon Association, and the committee was of opinion that a change in the constitution of both societies which would make affiliation possible would be to the advantage of both. Speaking of the efforts of the society with regard to the King Street House, Exeter, the report stated that its preservation was ultimately accomplished by the action of the Office of Works, although the society contributed to that success. A year ago the house seemed doomed, but the City Council had since shown that it had a mind to change. It would have been a thousand pities if the house had been demolished, for it was said that there were not six citizens' houses in England of equal date. They could have nothing but praise for the admirable public spirit shown by the City Council in its treatment of the Priory of St. Nicholas. No reasonable expense was being spared to open up and preserve the original features of this interesting and ancient building. During the past year further discoveries had been made, including, with some of the actual foundations, it was believed, the site and extent of the Priory Chapel. It was hoped that those who advised the Council would show conservatism and reticence in recommending restorations.

Referring to the stained-glass window erected in the Cathedral to the memory of the late Chancellor Edmonds, the report said it had five divisions, but one could not be filled with glass, the easternmost compartment being a blank owing to the masonry of the north tower encroaching on the window. In consequence the symmetry of the window was much disturbed. The drawing in the pictures was exquisite, particularly in the vestures of the figures, but more variety and deeper tone might be wished. It was too grey, sombre, and uniform in tone. The old windows were rich in colour tones, and it was to be hoped that the glass painters of the day would recover the grand mediæval principles. There was no doubt that there would be a general desire to put up permanent memorials commemorating the spirit of self-sacrifice shown by those who had engaged in the war. Such memorials should be excellent both in design and workmanship, and some should be within the reach of those of small means. It was feared that unless thought was directed to the artistic importance of such a movement many memorials would be unworthy and trivial in character. There were men, architects, sculptors, metal workers, artists, and craftsmen of all kinds quite capable of giving a noble and artistic turn to the outburst of feeling which rightly desired to express itself in material memorials. To-day there was such a body of artistic ability available as had not been the case for some generations, and all the monuments and memorials — unprecedented as they would be in number and importance — called for by the war could be sure of sound and competent workmanship of worthy designs and of a noble and artistic expression. There was no need for any repetition of the monumental horrors of the late eighteenth and early nineteenth centuries. If the public would be guided by those who knew and understood, then the monumental record of the war would

be—like those of earlier wars—a permanent enrichment of the art treasures of the country; the nobility of individual and common sacrifice would be reflected in its memorials. If individuals, ignorant of art, placed their orders and gave their instructions without discrimination or regard for the principles of art, then the result would be a crop of memorials which would suggest to later ages that this generation was deficient in the power of artistic perception. Those who had any voice in this matter, if not artists themselves, should insist upon the artists' advice and direction. The artists of to-day were capable, if only the public employed them, of making of the national desire to express in monumental records the spirit of this war and its devotion and sacrifice, such an aggregation of works of art as the generation should have no cause to regret, and would not need to fear in its honesty of purpose and executive finish being set alongside the memorials of the past.

Sir Robert Newman was re-elected president. Chancellor Pryke was added to the vice-presidents. Rev. C. Sherwin and Mr. Stanhope Nourse were re-elected joint hon. secretaries, and Mr. R. Jerman hon. treasurer. Miss Cresswell and Rev. J. F. Chanter were elected new members of the committee.

THE DAYLIGHT SAVING BILL.

The text of the Summer Time (or Daylight Saving) Bill, introduced in the House of Commons by the Home Secretary on Tuesday of last week, may be usefully reproduced here, seeing that builders are concerned with its provisions not less intimately than all other classes of the community. It will be remembered that an eminent builder, Mr. William Willett, was the pioneer of the movement. The text of the Bill is as follows:

1.—(1) During the prescribed period in each year in which this Act is in force, the local time in Great Britain shall be one hour in advance of Greenwich mean time.

(2) This Act shall be in force in the year nineteen hundred and sixteen, and in that year the prescribed period shall be from two o'clock in the morning Greenwich mean time on Sunday the twenty-first day of May until two o'clock in the morning Greenwich mean time on Sunday the first day of October, and His Majesty may in any subsequent year, by Order in Council made during the continuance of the present war, declare this Act to be in force during that year, and in such case the prescribed period in that year shall be such period as may be fixed by the Order in Council.

(3) Wherever any expression of time occurs in any Act of Parliament, Order in Council, order, regulation, rule, or by-law, or in any deed, time, table, notice, advertisement, or other document, the time mentioned or referred to shall be held, during the prescribed period, to be the time as fixed by this Act:

Provided that where in consequence of this Act it is expedient that any time fixed by any by-law, regulation, or other instrument should be adjusted, and such adjustment cannot be effected except after the lapse of a certain interval or on compliance with certain conditions, the appropriate Government department may, on the application of the body or person by whom the by-law, regulation, or other instrument was made or is administered, make such adjustment in the time so fixed

as in the circumstances may seem to the department proper, and if any question arises as to what Government department is the appropriate Government department, the question shall be finally determined by the Treasury.

(4) This Act shall apply to Ireland in like manner as it applies to Great Britain, with the substitution, however, of references to Dublin mean time for references to Greenwich mean time.

(5) Nothing in this Act shall affect the use of Greenwich mean time for purposes of astronomy or navigation, or affect the construction of any document mentioning or referring to time in connection with such purposes as aforesaid.

2. This Act may be cited as the Summer Time Act, 1916.

BOOK NOTICE.

Practical Draughtsmanship.

Methods of drawing are more numerous than the teachers of the art, for each student increases the complexity in greater or less degree. Books on the subject are innumerable, and are mostly bad, because their authors seem more bent on airing their own fads than on elucidating principles and showing their application to practice. "Practical Drawing," by E. G. Lutz, is not free from fads, but it does make clear many matters which in the ordinary treatise are slurred over or ignored. Usually the author of such text-books has a specialised visual habit, and is but dimly aware of the difficulties of those who have it not, and these are precisely the difficulties which, for nine beginners out of ten, are the most baffling and discouraging. One can imagine that the author of this book had encountered them himself, and had found it necessary to devise or ascertain means of overcoming them. He is of those who believe in the initial use of plenty of scaffolding or framework—that is to say, of a methodical arrangement of construction lines. Always providing that the student does not become a bond-slave to them, these mechanical aids to accurate perception are undoubtedly useful to students who are in special need of such discipline of the vision—a relatively large class. To them this book may be unhesitatingly recommended. It will make plain to them many things that may have seemed hitherto hopelessly obscure, and towards this effect abundant help is given in the form of illustrations, which, as a rule, are excellent examples of deft draughtsmanship, except that where shading-lines are used they are often curiously crude and uncouth. There is a chapter on lettering, of which we can say nothing better than that the examples shown are, almost without exception, forms that should be sedulously avoided; which is the more remarkable seeing that the author's own lettering, of which a great deal accompanies his 400 drawings, is quite respectable, though not elegant. There are, however, excellent chapters on charcoal and crayon drawing, water-colour painting, pen-and-ink drawing, geometry, perspective, pictorial composition, drapery, and drawing materials and implements. Taken as a whole, however, the book is one that any draughtsman, novice or expert, will value for its real utility.

"Practical Drawing." A Book for the Student and General Reader. By E. G. Lutz. With explanatory illustrations by the Author. Pages 250, price 6s. net. London: B. T. Batsford, Ltd., 94, High Holborn.

NEW ZEALAND GOVERNMENT OFFICES.

At the reception which the Hon. Sir Thomas and Lady Mackenzie gave on May 3 at the New Zealand Government offices in the Strand the guests, who numbered about 1,200, had an opportunity of viewing the building which has been erected for the purpose of housing the High Commissioner for New Zealand and his staff. The building, which is fronted with Portland stone, contains forty-six rooms. The ground floor space is almost entirely taken up by a magnificent reception hall, which has a coffered ceiling and columns of grande antique marble with brass caps and base, the flooring consisting of Roman mosaic with panels of rich coloured marble. This hall will lend itself in an excellent manner to the display of the products for which New Zealand is famous.

Beyond the hall is a fine staircase leading to the upper floors. The first floor is occupied by the High Commissioner's room, a library and reading-room, and the emigration staff. The second floor by the secretary to the department and the chief clerk, with their staffs; the third floor by the auditor and the accountant with their staffs; the fourth floor by the produce commissioner, veterinary officer, the dairy inspector, the representative of Customs, and the shipping department. At present on the fifth and sixth floors are housed the military adviser and a small part of the staff which is employed on work connected with the New Zealand Expeditionary Force.

There is ample cloak-room accommodation, as well as rooms for the use of the caretaker. The basement contains large storage space, and there is a strong-room for the reception of records. The building contains many modern improvements including central heating, with a liberal supply of hot and cold water on each floor and small passenger and goods lifts.

The architects were Messrs. George Crickmay and Sons, 13, Victoria Street S.W., and the building was erected by Messrs. John Greenwood, Ltd.

HOUSING AT GLASGOW.

A joint meeting of the Statute Labour and City Improvements Committee of the Glasgow Corporation had under consideration an offer by Mr. C. E. Wilkinson, Manchester, to sell to the corporation for £5,000, the St. Rollox Mills in Garngad Road, together with 13,100 square yards of ground occupied in connection with the mills. The committee being of opinion that the ground is suitable for the erection of dwelling-houses for the poorer classes, under the Glasgow Improvement Acts, recommend that it and the building on it be purchased by the City Improvements Department for the sum mentioned with immediate entry; that, for the purpose of widening Garngad Road, the ground required for that purpose, extending to about 550 or 600 square yards, be paid for by the Statute Labour Committee, at a price to be adjusted with the City Improvements Committee; that in lieu of a cash payment of the price, either a corporation mortgage or a temporary loan receipt bearing interest at the rate of 5 per cent. per annum be granted to the seller, to be repaid not earlier than twelve months after the termination of the war, and that it be remitted to the City Improvements Committee to dispose of the old material upon the ground.

"THE ARTISTRY OF ROOFING."

A booklet of uncommon beauty and interest has been issued from the Old Delabole Slate Quarries, Delabole, Cornwall. It bears the title "The Artistry of Roofing," and presents a series of fine half-tone illustrations of buildings as varied in type as Dublin Cathedral and a golf pavilion at Exmouth, with a manor house, some colleges, and several examples of domestic work to bridge the gulf. There are also some beautifully reproduced photographic illustrations showing the exquisite tints of old Delabole, green-grey, various tones of green in harmonious combination, and some exquisite reds.

In a section headed "The Manifold Uses of Slate," there are illustrated "a fine run of slate launders," a wide flight of slate steps in a garden at Cardiff, lighthouse floors, slate floors in the abbey in the Isle of Caldey, a crazy pathway of Delabole stone, and several other examples of the felicitous use of slate in garden borders, pathways, and seats.

Not less interesting than the illustrations, the text explains that the Delabole greens are "not one colour, but shades of a colour." A roof of either large or small expanse has a delightfully restful and soft appearance, distinct effects being observable from different angles. Broadly speaking, the great bulk of the output of these old-established quarries, which have been worked continuously since 1555, are green-grey—a soft-toned greenish grey.

Various ways of laying slates to secure artistic effects are described, and the firm claim that they were the first to make a feature of "randoms" to enable the laying of a roof in diminishing or graduated courses with slates of various widths, giving a fine effect of distinction. Graduated courses are also obtainable with the "rustics," varying in size from 8 in. to 12 in., and the firm are always willing to place their experience at the service of architects in working out ideas.

A list of architects who have specified Old Delabole slates includes all the eminent names, and almost every conceivable variety of building, public and private. Architects will be pleased not only to see but to treasure this handsome and valuable booklet.

THE TABARD STREET AREA.

There is reasonable prospect that the clearance of the Tabard Street area, Southwark, which was commenced several years ago by the London County Council, will be shortly completed.

The necessity of expediting the work was emphasised recently by the Southwark coroner, who severely criticised the action of the L.C.C., in allowing a certain number of persons to take up residence again in the locality. At a recent meeting of the Council Mr. Bernard Holland (chairman of the Housing of the Working Classes Committee) stated that the houses which had been re-let within the area were first made fit for human habitation. In the House of Commons Mr. W. Thorne asked the President of the Local Government Board whether his attention had been drawn to a statement made by the Southwark coroner and the evidence given by Dr. French; whether he is aware that the Tabard Street area has been declared unfit for human habitation, and condemned; whether he is aware that the London County Council have again decided to allow people to live in the condemned area; and whether he intends taking any action in the matter? Mr.

Long replied: "I have received letters from the Coroner for Southwark in regard to certain houses in the Tabard Street area. The carrying out of the Tabard Street improvement scheme, involving, as it does, very heavy capital expenditure, has been retarded in consequence of the war, but I have recently made an order under which it will be competent for the London County Council to proceed forthwith with the demolition of a large number of the worst houses in the area. I am in communication with the London County Council on the subject."

WAGES MOVEMENTS.

Barnsley Painters' Strike.

The house-painters' strike at Barnsley, which commenced on May 1, is still proceeding. A conference took place between masters and men, at which the masters refused to give 2d. per hour advance, but offered ½d. per hour war bonus, to terminate three months after the conclusion of the war. The men refused this, and finally decided to accept 1d. per hour advance if the masters would give it. This the masters also refused to give. They contend that the present rate of pay in Barnsley is 8½d. per hour, and with the exception of two towns, this is as high a rate as is paid anywhere in Yorkshire. Sheffield and Hull pay 9d. per hour to painters, but no other town in Yorkshire pays more than 8½d. The employers, therefore, claim that they pay a fair average rate of wages for a town the size of Barnsley, and that to grant an increase of 1d. per hour would put the local rate of pay to painters in excess of any other place in the county.

Increased Wages in Manchester.

Concreters and asphalters in the Manchester and Bolton districts have been granted an increase of a penny per hour in wages. The new rate came into operation last week, and will continue for two and a half years. The employers have also agreed to other financial concessions, and it is claimed that the conditions for this class of work in the Manchester and Bolton districts are better than those in any other part of the country.

Advance Conceded to Redditch Workers.

Recently the employees in the building trade at Redditch—bricklayers, carpenters, and labourers—applied to the members of the Redditch Master Builders' Association for an advance of 2d. per hour in the wages rates. The matter was referred to the local Conciliation Board, consisting of an equal number of representatives of the employers and employees. An award was made last week of an increase of a half-penny per hour on the men's wages, and an extra halfpenny an hour as war bonus, making the increase a penny per hour.

Increase Refused at Torquay.

Torquay Master Builders' Association have considered the request of the men employed in their trade, made through the local branches of the trades union, for an increase of wages of 4s. per week, and they have decided that owing to the slackness of trade they cannot see their way to accede to it.

Wages Increased at Swansea.

The Swansea building trades dispute has been amicably settled, all masons, carpenters, painters, etc., securing 1d. per hour increase. Their previous rates were 9½d. per hour. Labourers also obtained 1d. per hour advance.

NEWS ITEMS.

Mr. Charles Cox.

Mr. Charles Cox, builder and contractor, formerly of Hackney, who carried out work to the value of over £500,000 for the London School Board, has died at Eastbourne in his eighty-first year.

Centenary Memorials to Dr. Newman Hall.

In celebration of the centenary of his birth—May 22, 1816—a tablet is to be placed on the old home at 2, Well Road, Hampstead, of Dr. Newman Hall, who built Christ Church, Westminster Bridge Road. Mrs. Newman Hall is also giving property to provide homes of rest for aged workers in his memory.

Russo-British Trade.

The British manufacturer is in many cases in need of a proper system of representation and organisation in Russia. To meet this want the Russo-British Trade Exchange, Ltd., are taking steps to establish in Moscow—the leading Russian commercial centre—a series of exhibition show-rooms and sales-rooms with a complete Anglo-Russian technical and clerical staff for the representation of British and Colonial manufacturers and merchants on a co-operative basis.

Southwark Bridge.

The Lord Mayor of London, who was accompanied by Mr. J. J. Redding, chairman, and the members of the Bridge House Estates Committee, visited on May 8 Southwark Bridge, which is now undergoing re-construction at a cost of between £200,000 and £250,000. The manner in which the gradient of the bridge is being reduced was explained, and it was pointed out to the Lord Mayor that, having regard to the practical cessation of the work owing to the demands made on the contractors by the Government, fair progress has been made.

A New Book on Monuments.

"English Mural Monuments and Tombstones of the Seventeenth and Eighteenth Centuries" is the title of a book which Messrs. Batsford will publish this month. The volume will contain numerous reproductions of photographs to a large scale, specially taken under the direction of Mr. Herbert Batsford in various parts of the country with the intention that they should be representative of the best work of the period and form a source of inspiration for the present time. Mr. Walter H. Godfrey, architect, F.S.A., has written an introduction and notes to the photographs.

The Need for Improved Houses.

At a conference under the auspices of the Scottish National Labour Housing Association, in the interests of better housing, held in Dundee, about fifty delegates were present. It was agreed to support the policy of the association, and a committee was elected to promote a scheme for securing State grants to be used for the purpose of building houses let at rents to cover the cost of construction and maintenance, but to include no charge for interest. One of the speakers was Councillor John Wheatley, Glasgow, and in his address he said the standard of houses existing in Scotland was not in accordance with the views created by modern education. He attributed the increase in the cost of building to combines in relation to material, and said the working-classes could only get cheap houses by removing some of the charges on the houses if interest were abolished.

PUBLISHER'S ANNOUNCEMENT.

THE question of the cost of Advertising is governed entirely by the circulation of a publication. The prices for small Advertisements enumerated below are framed upon the lowest possible basis in order to allow the use of the columns of the Journal for "Wants," &c., at a figure well within the reach of everyone.

Advertisers are purchasing the circulation of a paper in buying space for their announcements, and we are able to announce that "The Weekly Nett Sale of The Architects' and Builders' Journal is larger than that of any other Architectural Journal."

Appointments Wanted.

4 lines (about 28 words) 1s. 6d.; 3 insertions, 3s.

ARCHITECT'S Assistant desires engagement; many years' experience; temporary work could be done at home; beyond military age; salary moderate.—W., 52, Grove Park Road, South Tottenham.

ARCHITECTURAL Draughtsman for Civil Engineer; joinery and furniture, with practical experience; ineligible for military service.—M. B., 33, Alwyne Villas, Canonbury, London, N. 803

BEAUX ARTS (Paris).—Architect undertakes show drawings, water colours, pen and ink perspectives for exhibitions or competition; designing interiors, elevations, decoration, public, commercial, or domestic buildings, flats; long London, Paris, and Swiss experience; excellent testimonials.—V. Hagopian, 13, Belsize Park Gardens, N.W. 798

BUILDER'S, Contractor's, Decorator's Clerk and Assistant; town or country; experienced accounts (jobbing and daywork), prime costs, book-keeping, and usual routine; ineligible; salary moderate.—J. E., 82, Park Street, Camden Town, N.W.

BUILDER'S Clerk (39); ineligible; well-up in all the usual routine of a builder's office, including taking-off, measuring, and estimating; excellent references; disengaged.—G., 3, Wesley Villas, New Windsor Street, Uxbridge.

CIVIL Engineer or Contractor's Manager, over 20 years' experience on public works in England and Colonies, requires position in month's time. Experienced in all branches railways, waterworks, sewerage, dock and jetties, bridges, etc. Highest references.—Box 799.

CLERK, 21, ineligible; 35s.; prime cost, ledgers, time-sheets, accounts, typewriting, etc.—R., 4, Bessborough Place, S.W. 815

CONTRACTOR'S Manager or Confidential wants berth; experienced, capable, and energetic; draughtsman, quantity surveyor, and estimator; adaptable.—Box 811.

GENERAL Foreman or Working Foreman; London or country; last four jobs alterations in London; carpenter and joiner by trade; over military age.—J. B., 2, Chameleion Road, Tottenham.

GENERAL or Working Foreman of Carpenters; used to various classes of work; new or alterations; twenty years' reference from last employers; free at once; good timekeeper.—280, Markhouse Road, Leyton, N.E.

GENERAL Foreman seeks re-engagement. Large and varied experience in Government work, alterations, etc. Any distance.—F. F., 43, Gaywood Road, Lloyd Park, Walthamstow. 810

MANAGER (Works or Building Department); thoroughly experienced; open to take up post, temporary or permanent, on special terms; replies confidential.—A. D. S., 19, Old Queen Street, Westminster.

PAPERHANGING (any description) wanted (piece-work); high reliefs: anaglypts, leathers, soirettes, embossed papers, Tekko, Emdeca, canvas, and all latest productions; panelling and special designs; town or country.—Logan, 185, Loughborough Road, Brixton, S.W.

PLASTERER wants job; can take charge or would contract for same.—J. H., 64, Southcroft Road, Streatham, S.W. 801

PRACTICAL man, well up in all branches of building construction, open to take work as Sub-contractor and price a schedule; prep. or fixing; carpenter and joiner by trade.—X. Y. Z., 33, Parkeston Road, Wood Street, Walthamstow.

THE Association of Builders' Foremen and Clerk of Works, 56, Old Bailey, E.C.—Experienced Foremen and Clerks of Works can be obtained by applying to the Secretary, Mr. J. W. Sawyer, 214, Clapham Road, S.W. Competent foremen and clerks of works are invited to join this Association.

WANTED (piecework) brickwork, pointing, excavating, drains, dilapidations. Large or small jobs. Any distance. By rod or job. Good references.—Apply, Watson, 8, Gladys Road, West Hampstead, N.W. 787

Appointments Vacant.

6d. per line.

ARCHITECTS' WAR COMMITTEE.

The object of the Professional Employment Committee is to provide temporary paid work for British architects who are entirely dependent upon their profession for their living, and whose present difficulties are due entirely to the war. Applications can only be considered from architects who are ineligible for military service and unable to obtain War work of a professional nature. Enquiries should be addressed to the Honorary Secretary of the Committee at 28, Bedford Square, London, W.C.

BUILDER'S Clerk wanted; used to bought ledger, jobbing accounts, prime cost, and general routine.—Apply, by letter, George Kemp and Co., Contractors, Elms Road, Aldershot.

CONSTANT employment offered to practical energetic Working House Decorator and general repairs for London; state ability and wages.—Write, Property Owner, 85, Hertford Road, Lower Edmonton, N. 812

REQUIRED by firm of building material specialists experienced draughtsman, used to taking measurements of new and existing work and plotting out full-sized details and workshop particulars.—Box 808.

WANTED, Traveller, to take orders all over United Kingdom; commission paid on receipt of orders; great demand; specified by more architects than any vent made; selected by War Department, L.C.C.—"Sanatorium Iron Air Brick," 58, Denmark Road, Southport. 782

Miscellaneous.

6d. per line.

BUILDING and decorating business, old-established, in West End of London, for sale owing to death of proprietor. Must be disposed of immediately; no reasonable offer will be refused.—Apply, Shields, 63, Berwick Street, Oxford Street, W. 814

BOOKS.—Books on Building Trades, Engineering, Educational, Literary, Technical, and all other subjects; second-hand at half prices; new books at discount prices; catalogues free; state wants; books sent on approval; books bought; best prices given. W. and C. Foyle, 121-123, Charing Cross Road, London, W.C.

TO ARCHITECTS COMPETING. SCHEMES AND ESTIMATES FOR ENGINEERING WORK.

(Lighting, Heating, Ventilation, and Sanitation), and Architectural Metal Work, supplied free of charge of **STRODE AND CO., Ltd.**, 48, Osnauburgh Street, London, N.W., and 18, Easy Row, Birmingham.

SECOND-HAND Optical Mart

For the Purchase and Sale of **LEVELS, THEODOLITES, DRAWING INSTRS.**—Clarkson's, 338, High Holborn, London, W.C. (Opposite Gray's Inn Road).

IRON Doors.—Twenty-four second-hand, single, double-hinged or swinging; state size required.—Engineer, Spottiswoode, Ballantyne and Co., 1, New Street Square, E.C. 783

DRAWINGS, Details, Tracings, etc., promptly prepared at moderate fees.—Drawing Office, 280, London Road, Dover. 809

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POLING boards, selected lengths and thicknesses, best quality and full measure, also scaffold boards, putlogs, scantlings, deals, batten and boards; lowest wharf prices.—C. H. Glover and Co., Ltd., Importers, Hatcham Saw Mills, Old Kent Road, S.E.

WANTED, second-hand building 150 ft. by 20 ft. or larger; either wood or iron; state price, size, and where same can be seen.—Box 807.

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6d. per line.

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In Class, by Correspondence, or in Office for the Examinations of **THE SURVEYORS' INSTITUTION, THE ROYAL INST. OF BRITISH ARCHITECTS,** and the **SOCIETY OF ARCHITECTS,** On a complete, practical, and highly Successful Method by **Mr. JAMES NEILL, F.S.I., Etc.,** Architect and Surveyor, Standard Buildings, Leeds. (Tel. 192.)

Note.—Before deciding upon any system of tuition, an intending candidate is invited to communicate with Mr. Neill (who, in addition to many other qualifications, is a Medallist, Honoursman, Prize-man, and Head of the Department of Building at the Leeds Technical School).

The 9 months' S.I. Courses commence in June. Past successes include:—The Penfold Silver Medal, Building Prize, Driver Prize, and the Irish Special Prize.

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Special personal system of preparations by correspondence or private tuition. Bond and Batley (A. G. Bond, B.A. Oxon, A.R.I.B.A.), 96, Grosvenor Road, S.W. Tel. 7086 Victoria.

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The Trustees are prepared to receive **TENDERS** for the **PURCHASE** of the **VALUABLE FREEHOLD BUILDING SITE** of the Premises known as **The Black Horse P.H.**, 215, Kingsland Road, adjoining St. Columba's Church and the Offices of the Guardians, comprising an area of about 3,450 sq. feet.

Forms of Tender with Plan and full particulars may be obtained of **MESSRS. PERCY H. CLARKE AND SON**, Surveyors and Auctioneers, 2, Lancaster Place, Strand, London.

Tenders are to be delivered on or before **TUESDAY, May 23** next, and must be in sealed envelopes, marked "Tender for Black Horse Site," and addressed to **S. G. PORTER, ESQ.**, Clerk to the Charity Trustees, Shoreditch Town Hall, Old Street, E.C.

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BRACKETT AND SONS are instructed by Mr. B. S. Beale (trading as Beale and Sons), who has enlisted in H.M. Forces, to **SELL** by **PUBLIC AUCTION**, on the Premises, on **MONDAY, JUNE 5, 1916**, and following days, the valuable and extensive **BUILDER'S PLANT**, including Gas Engine and Machinery, Ladders, Builder's Office, a Large Quantity of Timber, Planking, Ironmongery, Scaffold Poles and Boards, Fine Old Oak and Mahogany Nobles and Hoare's and Mander's Varnishes, and a great number of other Effects.

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GUILDFORD RURAL DISTRICT COUNCIL.

TENDER FOR GRANITE.

The above-named Council invite **TENDERS** for the **SUPPLY** of **GRANITE** during the year ending March 31, 1917.

Forms of Tender and other information can be obtained upon application to the Surveyor, **MR. JOHN ANSTEE, C.E.**, at the Council's Offices, Commercial Road, Guildford, and Tenders are to be sent in to me not later than **FRIDAY, the 19th inst.**

The Council do not bind themselves to accept the lowest or any Tender.

By order,

W. S. V. CULLERNE.

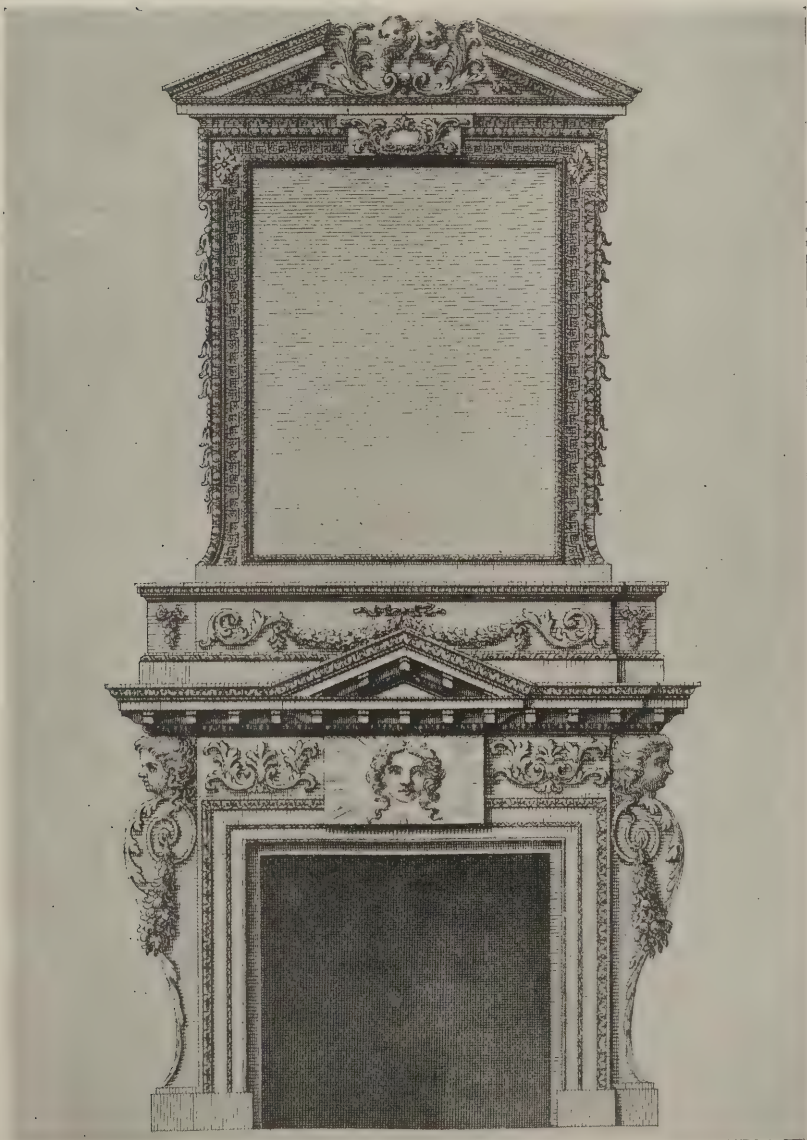
Clerk to the Council.

Commercial Road, Guildford,
May 4, 1916.

THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, May 24, 1916.

Volume XLIII. No. 1116.



DESIGN FOR A CHIMNEYPiece, BY WILLIAM KENT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

MAY 24, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1116.

EDITORIAL.

NOTING with approval our insistence on the necessity for simplifying land transfer, an architect has reminded us of two extremely interesting discussions on the subject—one at the Town Planning Conference held by the R.I.B.A. in 1910, and the other in the House of Lords on July 10, 1911. At the conference, Mr. C. H. B. Quennell, F.R.I.B.A., in a paper entitled "Town Planning and Land Tenure," naturally included land transfer. Under what is known as the private deed system, it is necessary, he remarked, to prove the vendor's title. "To do this, there is the necessity of going back forty years, and ascertaining that the estate is not encumbered in any way. The abstract of title which is provided by the vendor's solicitor, and which is in reality a more or less lengthy précis of the deeds, has to be verified by comparison with them, with the added complication that they may be in several hands. All probates of wills must be looked into, and possibly, as well, certificates of births and marriages; and with the new deed that has to be prepared there is an enormous amount of unnecessary work that has to be repeated every time a purchaser comes along, assuming that estate development is in hand."

* * * *

As a remedy, the more general application of land registration has been suggested. From this system great things were expected, but it has fallen very flat, partly through ignorance of it, and partly from mistrust. Because of the absence of time-honoured pomp and circumstance, simple-minded persons (the description seems paradoxical) shun the Land Registrar as religiously as they shun the registrar of marriages. It is a matter in which the public confidence has yet to be gained. To refer to the example of Germany, as Mr. Quennell did at the conference, was at that time to make an excellent point; and, in spite of very natural prejudice, the fact holds good that the Germans regard land registration as a valuable adjunct to town planning. Bankers, it is added, are much more ready to advance money on the security of a land certificate, which can be easily verified at the Land Registry as being unencumbered, and on which they can themselves place a caution that so much has been advanced.

* * * *

One of the speakers in the discussion on Mr. Quennell's paper gave, from his own personal experience, a further reason for the unpopularity of registration. He had known cases in which the delays attending the sale of small plots, owing to the difficulty of altering the registers and getting certificates, and so forth, had been so great, and the expense so heavy, that the land had been deliberately taken out of the register of title and sold with the title which it first

had. He had been told, he said, that, as a matter of fact, "the expenses of dealing with land, as you go on dividing and sub-dividing it in the case of a registered title, are far greater than has been the case in ordinary reasonable circumstances in dealing with land under the old system." Perhaps he had been misinformed; or perhaps the normal business of the registrar is so small as to have reduced the administrative staff to inadequacy to bursts of occasional briskness.

* * * *

That the Land Registry is, either in principle or in practice, inadequate to the situation, was recognised in the form of the question which raised the debate in the House of Lords in 1911. Lord Halsbury then asked the Lord Chancellor whether he could give the House any information as to the steps which his Majesty's Government had in contemplation for utilising the labours of the Royal Commission on the Land Transfer Acts, and whether their recommendations for the improvement of the Land Registry would be carried out with a view to the extension of the system. In reply, the Lord Chancellor (Lord Loreburn) spoke at considerable length, and, after mentioning that the Government had prepared a Bill which would give effect to the recommendations of the Royal Commissioners, he made the important admission that "the present position of the law in England as regards the title to landed property and the methods of transferring it, except where there existed registration of title in the County of London, was little short of a scandal. It was almost unique for its futility and costliness." His description of the cumbersome and dilatory formalities followed closely that given by Mr. Quennell. He added that, apart from all stamps, duties, or Government charges, the solicitors' costs and charges out of pocket for transfers of landed property amounted to four millions sterling a year, whilst the Government stamps on dealings in land amounted to no more than one million.

* * * *

The Lord Chancellor recognised the dangers incidental to the present system—loss of deeds, loss of proofs of the right to property, concealment of deeds so as to hide defective title. There was, he said registration of deeds in only two counties in England, and the system had little or no effect on the evils. The reason was because of the extreme complexity and technical character of the subject so that public opinion could not be brought to bear upon it, the enormous strength of the vested interests concerned in the maintenance of the present system, and the aversion to the learning of a new system, the dislike of innovation, which were, fortunately or unfortunately, characteristic of the legal profession. We have on previous occasions hinted at this incidence of the

conservatism of lawyers, but would rather leave so delicate a reference in the hands of so eminent a member of the profession as Lord Loreburn. Without for a moment insinuating that fees have anything whatever to do with the opposition of the lawyers, we may be permitted to suggest (in token that we are not callous of consequences) that in the long run the profession would gain by the change. There might, it is true, be at first a certain degree of local and casual "displacement of labour," but the volume of business would vastly increase by reason of the high multiplication and high frequency of transactions under a simpler and freer system of exchange.

* * * *

If lawyers will but grasp this idea, and will remember also that there must always accrue to them a certain harvest in the matter of "restrictive covenants" and other contingent sources of emolument they may feel the more disposed to throw in their enormous weight on the side of reform rather than in opposition to it. Eminent lawyers have long approved of this proposed reform. Lord Loreburn, in the speech we have cited, said that every man who had held the Great Seal during the preceding sixty years had been in favour of registration; and in the same discussion, Lord Halsbury and Lord Haldane agreed with the Lord Chancellor, as Lord Haldane said, "in the recognition of a great principle"; and Viscount St. Aldwyn, the President of the Royal Commission on the Land Transfer Acts, said that in Germany the fees charged to landowners for the registration of title were very small indeed. If, he added, by cheapening the process of registration, the objection of landowners could be got rid of, and if the present system were amended in various points, he thought it would be found to work so much more easily that even the solicitors themselves might be induced to look upon it as an advantage to their profession.

* * * *

It need not be said that our chief concern is not that lawyers, but that building should flourish. One section of the community (as lawyers should know) may prosper to the detriment of all the rest of it; but this matter of land transfer is one upon which much of the prosperity of the entire community can be justly said to depend. It is a basic condition of industrial welfare, and as we have just seen, is a not unimportant element in the commercial progress of Germany. At the present moment the housing question is acute. Easier and less costly transfer would help to solve the problem. In anticipation of the expansion of trade, industry, and commerce that must crown our success in the war, large schemes for the erection of factories and business premises are in contemplation. If they are to materialise with the rapidity and economy that are essential to the emergency, and to the full development of an unparalleled opportunity, antiquated systems of land tenure must not be allowed to block the way. This, therefore, is no mere academic and no inopportune discussion. Land reform is a subject of immediate importance, not simply or mainly because the welfare of architects and of the largest synthetic industry depends upon it, but because it has a vital bearing on national economy.

* * * *

Our contemporary the "Irish Builder" is to be congratulated on its reappearance after only one week's suspension during the recent troubles. Its premises in Lower Abbey Street, Dublin, were totally destroyed by fire, and this cruel experience lends peculiar force to our contemporary's plea for the reconstruction of the devastated area on modern fire-resisting principles. "If anything like modern

fire-resisting construction had existed, even here and there," the writer says, "the fire might have been stayed, and limited to sections. . . In important and crowded centres, when premises are being rebuilt, the corporation should insist upon fire-resisting methods being adopted. The old timber floors and joists should be prohibited. All steelwork, without exception, should be properly encased. The floors should be of reinforced concrete or terra-cotta construction. New party walls should be of concrete in preference to thin brickwork, and preferably reinforced with some form of steel meshing." This is sound and timely advice, and the surprising thing is that at this time of day it should be necessary. In London it would be enforced by the regulations of the London County Council. If Dublin Corporation is in need of enlightenment in such matters, it may find them set forth in due detail in the current issue of "Specification," to which Mr. Harold G. Holt, A.R.I.B.A., has contributed a comprehensive survey of the whole subject of fire-resisting construction; while the section on reinforced concrete construction includes illustrated descriptions of the leading systems of fire-resisting flooring and of expanded metal, wire-mesh, and other approved forms of walling.

* * * *

Sackville Street, as the Royal Institute of Architects of Ireland have been commendably prompt in urging, should be regenerated on architectural and town-planning principles. These, it is hardly necessary to add, are by no means incompatible with fire-resisting construction. If they were, the less æsthetic consideration would prevail; but dignified and harmonious façades are certainly not antagonised in any way by the adoption of modern methods of construction, which leave the architect entire freedom as to the materials and treatment of the elevation. Dublin has paid a deplorably heavy penalty for this opportunity, and should therefore be the more determined to take the fullest advantage of it by establishing a complete physical as well as moral rehabilitation. There is little doubt that the corporation will be equal to the occasion. If it be not, it will not be the fault of the Irish Institute, which is both able and willing to render competent advice and assistance, and has met the situation with exemplary alertness. It may be feared that the Irish Institute has stepped beyond bounds in appending to its appeal for co-ordination of design a request for the immediate compensation of those whose property has been destroyed; but the addendum seems to be justified by the extraordinary circumstances. Owners who have been suddenly and simultaneously impoverished might be constrained to rebuild deplorably unless they received the compensation to which they seem justly entitled; and compensation should strengthen the case for central control.

* * * *

A writer in the "Evening Standard" expresses astonishment at finding men at work on a new great block of offices in Kingsway. He "had thought that all building except what was absolutely indispensable was stopped"; but he dissipates his momentary perplexity by adding that "a very capable architect has been appointed to assist the Government with advice as to what is indispensable or not." As the writer remarks, such a task puts the architect in a rather unenviable position. A judge at a beauty show would create less jealousy. Other large works, we understand from other sources, are being resumed, and the news is here recounted in the belief that it will be generally welcomed among architects and builders, especially by those who, their private work having been stopped, have not been allotted any share in the tremendous national activities to which all sectional

interests are very properly subordinated. Nothing short of military necessity could excuse the sudden and general stoppage of all building work. In many instances the cessation must have caused not merely excessive inconvenience, but grave danger; and it is no doubt as a result of representations upon these points, and on others of almost equal consequence—such as the serious losses that must occur to the individual immediately, and ultimately to the sum-total of national wealth through the postponement, or indeed the destruction, of business and commercial enterprises, that the prohibition is being judiciously relaxed. Some mitigation in this severity was imperative, and the knowledge that it has been initiated will put new heart into all to whom it means at least a chance of early resumption of activity.

HERE AND THERE.

ABOUT this time in the years before the War we used to be concerning ourselves with that difficult question, "How to brighten cricket?" It came in regularly with the early gooseberries, just as the dog days, or the "silly season," was the recognised time for starting some other discussion concerning our present or our future life. To-day, and every day, we have instead, "How to get on with the War," and Conscription and the calling up of the groups have made that an intimate question to many who never expected to become soldiers. Yet by reason of the very seriousness of this present state of War we must insist in turning to the lighter side of affairs, and our thanks are due therefore to a writer who introduces to our notice, in the current issue of "Kahncrete Engineering," a mathematician who, like "Lewis Carroll," can see the human side of figures and symbols. Mr. Stephen Leacock, so I learn, is the author of some joyous books of "so humorous a character that for many years it was found impossible to print them. The compositors fell back from their task suffocated with laughter and gasping for air," and nothing but the invention of the linotype machine, or rather of the kind of men who operate it, made it possible to print these books—"Sunshine Sketches of a Little Town," "Moonbeams from the Larger Lunacy," and the rest. I myself, more than once, have inveighed against the serious stodge of the customary architectural lecture and the soul-deadening chatter of the orthodox presidential address. But even in these we are accorded some little glimpse of the human side. Not so in the technical book and those forbidding volumes filled with the approved jargon and fearsome signs and wonders of the mathematician. Mr. Leacock shows us what a delightful change might be wrought if only, for instance, the newspaper sub-editor were allowed to handle the matter in his own breezy manner. Euclid puts before us in the most prosaic manner possible, just as if it were an occurrence of no concern at all, such an item as the following: "A perpendicular falls on a line A—B, bisecting it at a point C," etc.

This does not move our interest in the slightest degree, whereas our attention might be riveted by the sub-editor thus:—

Awful Catastrophe!

Perpendicular falls headlong on a Given Point.

The Line at C said to be completely Bisected.

Manager of the Line makes Statement.

And similarly in relation to a hundred different matters. Moreover, we get in Mr. Leacock's "Boarding House Geometry" a glimpse of the beneficent results which might accrue in ordinary domestic life from this humanising of mathematics. Thus: "If there be two boarders in the same flat, and the amount of the side of the one be equal to the amount of the side of the other, each to each, and the wrangle between

one boarder and the landlady be equal to the wrangle between the landlady and the other, then shall the weekly bills of the two boarders be equal also each to each. For if not, let one bill be the greater. Then the other bill is less than it might have been—which is absurd."

But our personal interest is aroused most keenly perhaps in Mr. Leacock's analysis of the personal characteristics of those bodiless creatures A, B, and C who move, devoid of all sympathy, through the pages of the mathematical text-book. They are presented to us in this way: "A, B, and C are employed to dig a ditch. A can dig as much in one hour as B can dig in two, and B can dig twice as fast as C. Find how long," etc. But who are these men? What of their personal characters, as well as their capacities for ditch digging? Mr. Leacock tells us. Through countless pages of problems he has watched them in their strenuous hours and in their leisure hours, and says: "A is a full-blooded blustering fellow, of energetic temperament, hot-headed and strong-willed. It is he who proposes everything, challenges B to work, makes the bets and bends the others to his will. He is a man of great physical strength and phenomenal endurance. He has been known to walk forty-eight hours at a stretch, and to pump ninety-six. His life is arduous and full of peril. A mistake in the working of a sum may keep him digging a fortnight without sleep. A recurring decimal in the answer might kill him. B, on the contrary, is a quiet, easy-going fellow, afraid of A and bullied by him, but very gentle and brotherly to letter C, the weakling. He is quite in A's power, having lost all his money in bets. Poor C is an undersized, frail man, with a plaintive face. Constant walking, digging, and pumping have broken his health and ruined his nervous system. His joyless life has driven him to drink and smoke more than is good for him, and his hand often shakes as he digs ditches. He has not the strength to work as the others can—in fact, as Hamblin Smith has said, 'A can do more work in one hour than C in four.' I never heard of any of them eating or sleeping. Then, owing to a long absence from home, I lost sight of them. On my return I was surprised no longer to find A, B, and C at their accustomed tasks; on inquiry I heard the work was now done by N, M, and O, and that some people were employing for algebraical jobs four foreigners called Alpha, Beta, Gamma, and Delta. . . . Very moving was the death of C, which occurred through a mistake about the medicine. It stood at the head of the bed, on a bracket, and the nurse accidentally removed it from the bracket without changing the sign."

Parliament and the Gas Companies, between them, have put the patriot in a dilemma. Parliament has given us this Daylight Saving Act, telling us that we shall be effecting a great national economy by working an hour more in daylight and an hour less by artificial light. At the same time, the Gas Companies impress the fact upon us that as the output of high explosives depends on the supply of toluol and benzole, the bulk of the supply of which is derived from coal used in gasworks, we shall be doing the better for our country the more gas we burn. What, then, is the good patriot to do? The Local Authority that presides over his existence cannot surely be a proper model to follow, for it has itself extinguished street lights and brow about a reduction in gas pressure, thereby consuming less gas and, according to the Gas Companies' argument, restricting the output of high explosives, and so delaying the victorious advance of the Allies. Obviously we cannot do as the Local Authority does. We had better therefore follow the advice of a correspondent of "The Times," who has instructed his household to go to bed early, but on no account to turn out the gas!

UBIQUE.

THE ARCHITECTURAL ASSOCIATION'S TEMPORARY PREMISES.

AS already announced in this Journal, the Architectural Association have sold the premises they occupied for many years at 18, Tufton Street, Westminster, and, pending removal to some building more conveniently situate, and better suited to their growing needs, have acquired temporary premises at No. 37, Great Smith Street, Westminster, a house of early eighteenth-century date possessing a general air of architectural refinement. Two views of the interior are here shown, the staircase and the secretary's office.

The staircase, which is dog-legged and similar to those in the older parts of the Inns of Court, is noteworthy for certain points of detail. Thus, the spiral balusters, instead of diminishing as usual to fit the spandrel piece formed by the return of the upper flight, are omitted altogether. The octagonal newels are also unusual, and so, for that early date, is the mahogany slip which forms the top member of the soft-wood handrail.

The first-floor rooms, now used as the office and council-room, are as usual the best in the house. homely, comfortable, lined with square-framed deal panelling from floor to ceiling. The front room has on the right of the fireplace an interesting china-cupboard, with pilasters, pulvinated frieze and pediment, and shelves elegantly curved on plan. At a later date, apparently the front has been filled in with a pair of glazed mahogany doors. The back room keeps its original bolection-moulded chimney-piece, while those in the rest of the house have been supplanted by plain Sicilian marble chimneypieces of Victorian type.

Most of the pictures from the old premises have found a place on the walls of the new. But the same cannot be said of the casts, and it is worth while to pay a visit to the Victoria and Albert Museum—



Staircase.

where the bulk of the casts have gone—to realise the extent of the Association's former collection and how many fine things, almost unseen at 18, Tufton Street, were in it.

The Architectural Association, while engaged busily with Active Service work, is still continuing its educational programme, and its Day School of Architecture is maintained on its former lines, though, of course, when so many members and students are away serving with the Forces, the present cannot be regarded as other than an interregnum period.



Secretary's Office.

THE PLATES.

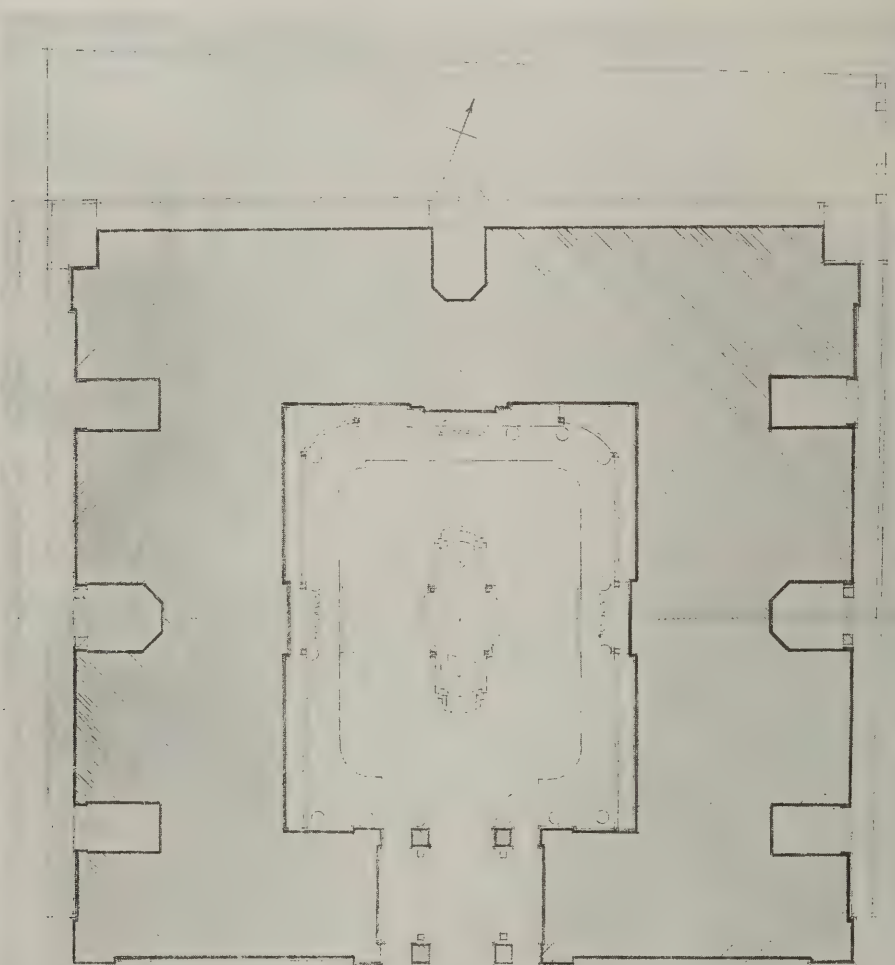
Drogheda Court, London, W.

THIS building, comprising maisonnettes with a courtyard having open screens on the south-east side, is to be carried out as soon as the Government will permit and conditions regarding labour and materials can be dealt with more easily than is possible at present. The suites are planned on axial lines and with varying accommodation. The larger maisonnettes will comprise an entrance hall with ante-chamber, drawing-room, dining-room, eight bedrooms, dressing-room, billiard-room, bathrooms, and servants' sitting-room, etc. The smaller maisonnettes will have from six to four bedrooms. Each maisonnete is to be provided with a separate trade entrance and trade lift, and all the rooms and halls are to be direct-lighted.

gymnasium are also to be provided, and there will be a small ice plant below the courtyard level. The main elevations are intended to be faced with Portland stone, with some portions in blue Forest of Dean. The interior will be treated on simple but dignified lines, utilising *stuc*, marble, English jasper, stone, parquet, and pine; plaster and bronze panellings; and enrichments of a dull-glazed coloured faïence, and some Australian and Canadian hardwoods. Messrs. William and Edward Hunt, F.F.R.I.B.A., are the architects.

Molière Fountain, Paris.

Paris possesses several monumental fountains, chief among them being the fountain in the Place St. Michel. Like this latter, the Molière Fountain is set against the end wall of a house at the junction of the Rue de Richelieu with the Rue Traversière, close to the house where Molière died.

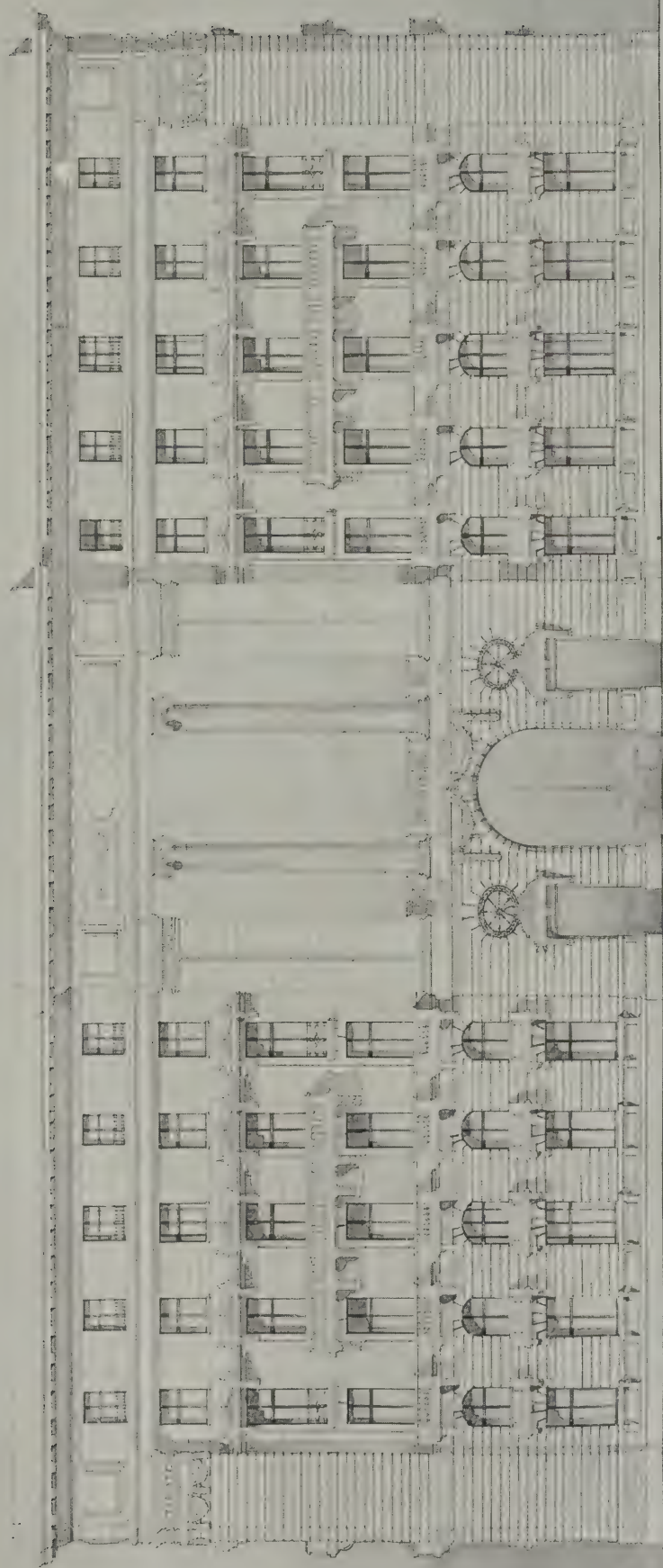


DROGHEDA COURT, LONDON, W.: BLOCK PLAN.

WILLIAM AND EDWARD HUNT, F.F.R.I.B.A., ARCHITECTS.

Cloak, wardrobe, linen and store closets are provided for each suite, as well as a service lobby separating the culinary department, which is proposed to be equipped with a complete electrical and steam installation for cleaning and cooking and for mechanical washing and drying of china and domestic utensils; the object being to reduce labour to a minimum. A garage is contrived on the sub-ground level for storage and cleaning of cars, with separate entrance at the north-west end. A ballroom, restaurant, children's recreation room and

Visconti was the architect. There is a seated figure of the great writer by Seurre, on a finely designed pedestal surrounded by a basin, and on either side are two figures of Serious Comedy and Light Comedy, by Pradier; the whole being set against an architectural background comprising coupled columns supporting a curved pediment. The fountain was erected by public subscription in 1844. Pradier, whose sculpture is here seen to excellent advantage, has been called the author of the Louis Philippe style, and, as Miss



CURRENT ARCHITECTURE (SERIES III.). XXXIV.—DROGHEDA COURT, LONDON, W.: SOUTH-EAST ELEVATION, WITH ENTRANCE TO COURTYARD.

WILLIAM AND EDWARD HUNT, F.F.R.I.B.A., ARCHITECTS.



MONUMENTS. XVIII.—MOLIÈRE FOUNTAIN, PARIS.

VISCONTI, ARCHITECT. PRADIER, SCULPTOR.



DOORS AND DOORCASES. IV. —IN A HOUSE ON THE HEERENGRACHT, AMSTERDAM.



Stone House, Lewisham, London, S.E.

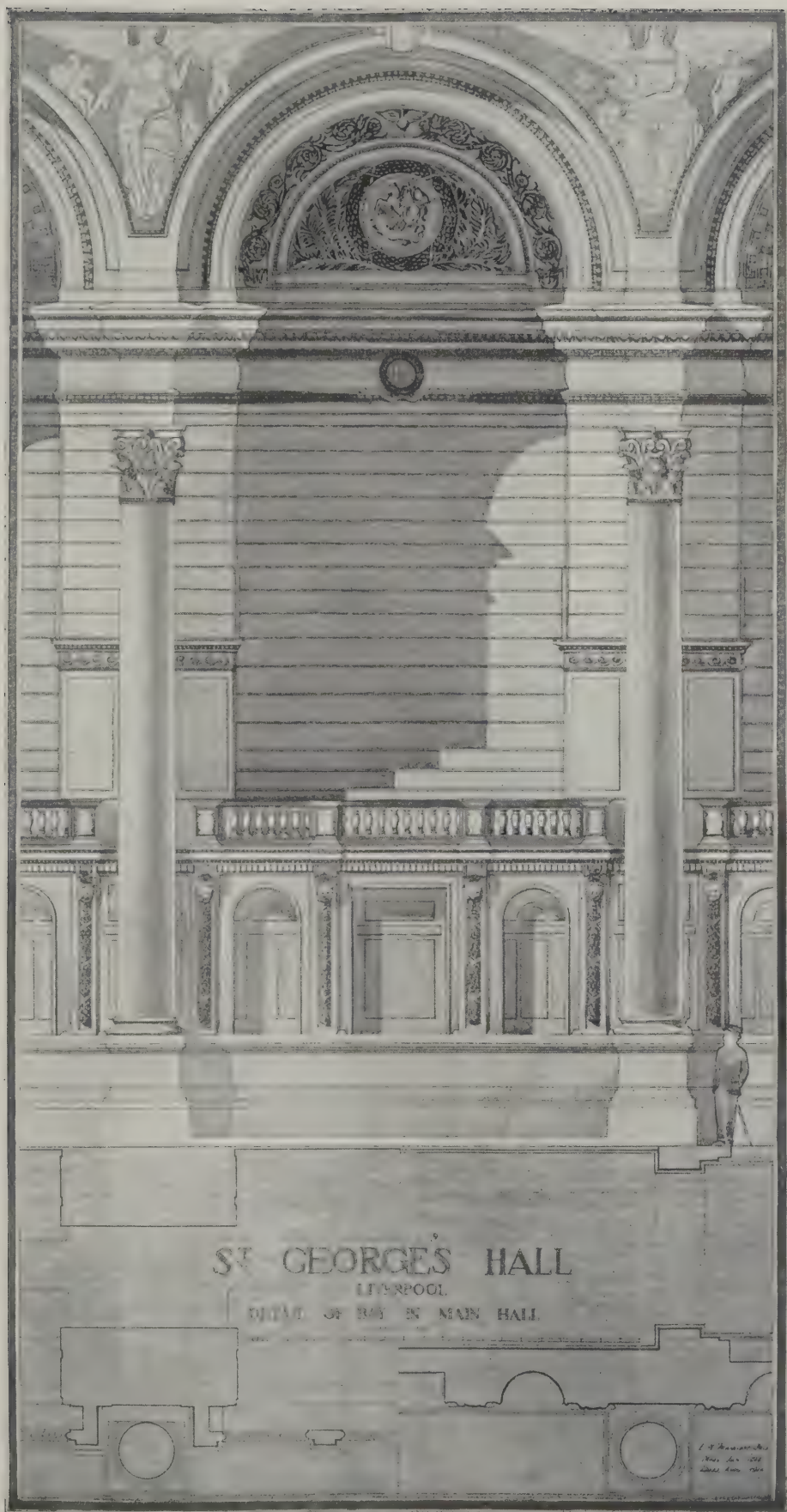


The Grange, St. Peter's Street, St. Albans.



DETAILS OF CRAFTSMANSHIP (SERIES II.). IX. - PLASTERWORK IN DINING-ROOM, MINSTED, MIDHURST, SUSSEX.

MERVYN MACARTNEY, F.R.I.B.A., ARCHITECT. GEORGE JACK, CRAFTSMAN.

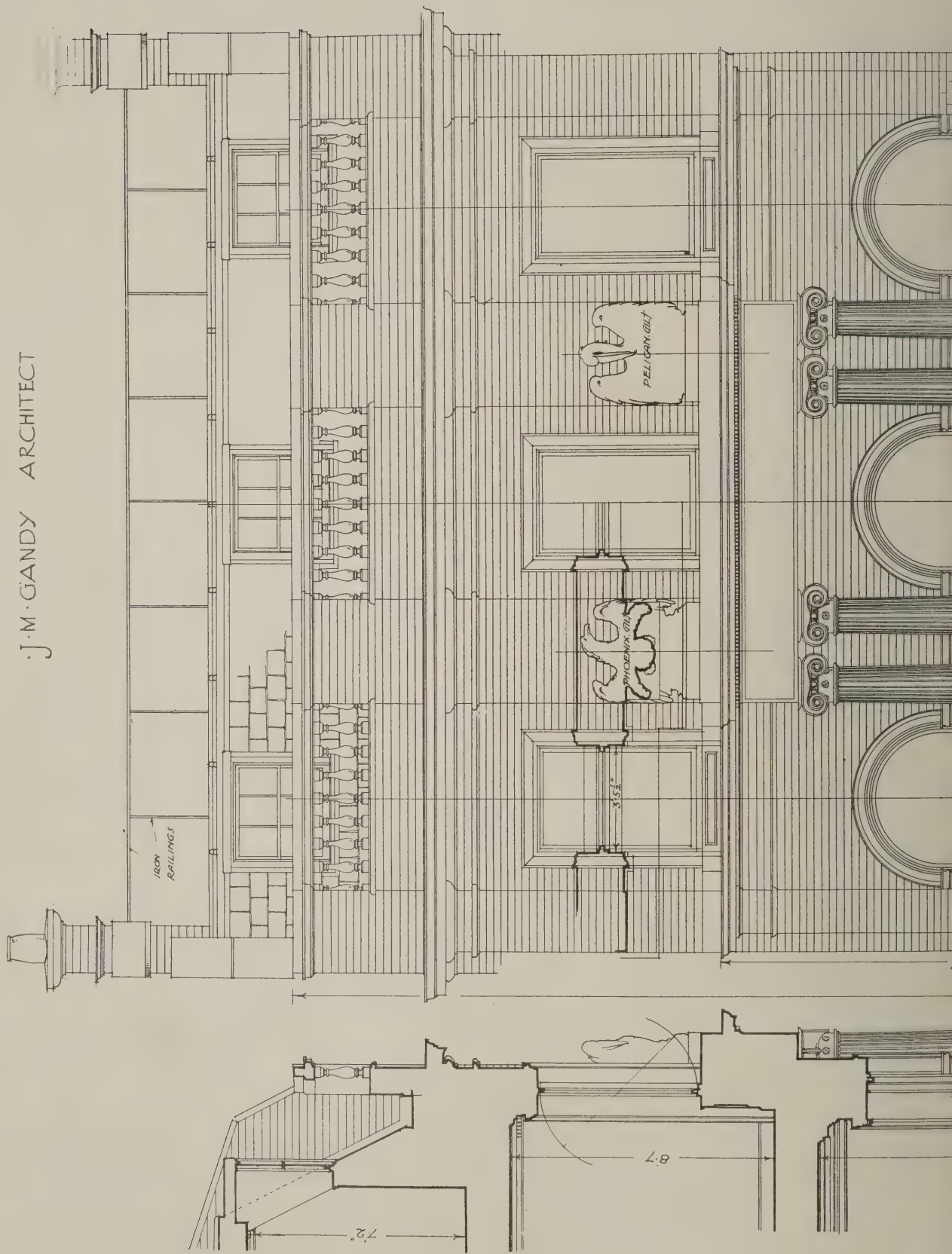


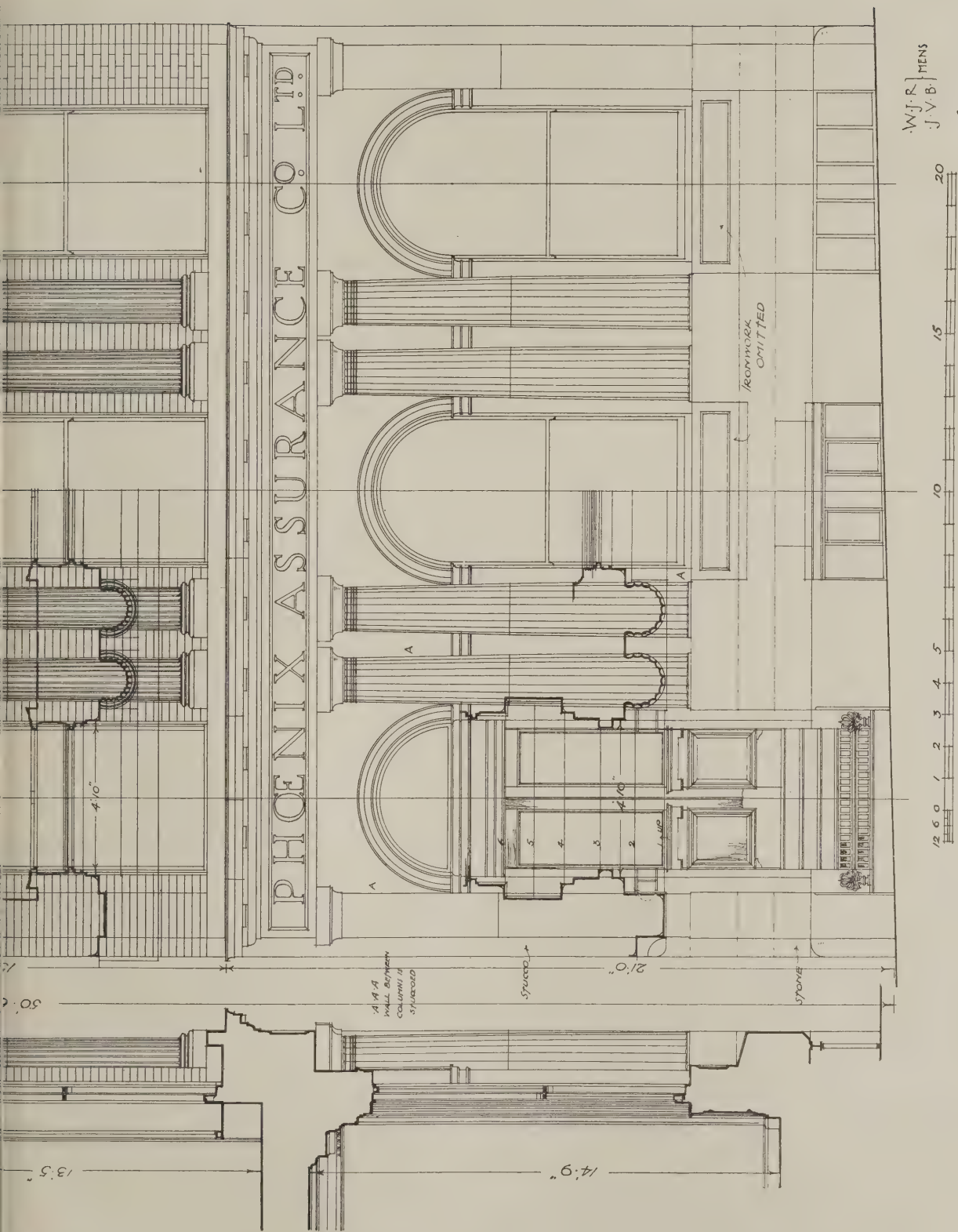
STUDENTS' DRAWINGS (SERIES II.). XXVI.—ST. GEORGE'S HALL, LIVERPOOL: BAY OF MAIN HALL.

MEASURED AND DRAWN BY E. N. FRANKLAND-BELL.

~NO·57· CHARING · CROSS · S·W·

J·M· GANDY ARCHITECT





W.J.R. J.V.B. 1915
J.M. GANDY, ARCHT.

LONDON FAÇADES. VIII. — PHOENIX ASSURANCE BUILDING, CHARING CROSS, LONDON. J. M. GANDY, ARCHT.
DRAWN BY W. J. ROBERTS, M.A., A.R.I.B.A.

Kingsley remarks in her "History of French Art," his gifts—his facility, his decent paganism, his correctness and elegance—were such as suited the taste of the time. "He sets out every morning for Athens, and arrives every evening at the Rue de Bréda," said the caustic Préault, to which Miss Kingsley adds: "He fills the place in sculpture which Delaroche filled in painting—that safe and happy mean which brings prosperity; for it is certain to make no demands upon the greater depths of feeling and intelligence." Pradier, among his many other works, executed the "Victories" for the Tomb of Napoleon and the statues of "Lille" and "Strasbourg" on the Place de la Concorde.

Doorway in House at Amsterdam.

The Heerengracht is the principal of all the waterways of Amsterdam. The old house-fronts which line it are punctiliously reserved in appearance, but the interiors which they screen are in many cases of a most exuberant character, full of fine pictures, elaborate plasterwork, and rich woodwork. The house from which the doorcase illustrated is taken is now occupied by an insurance company, but must originally have been the residence of a wealthy family. The woodwork, it will be noted, is French rather than Dutch in style—a fact readily explainable when it is recalled that towards the end of the eighteenth century Holland was a dependency of France, and innumerable French craftsmen must have worked throughout the chief cities. The ground, moreover, had already been prepared by Daniel Marot, who, as architect to William III., brought a strong French influence into Dutch work. There is a strong suggestion of Marot in the sculptured "overdoor" in this example.

Two Late Georgian Houses.

The upper illustration on the plate shows a general view of Stone House, Lewisham, the porch of which was illustrated last week. The lower illustration shows "The Grange," St. Peter's Street, St. Albans, a late eighteenth-century house noteworthy for its general restraint in the treatment of windows, doorway, and undisturbed wall surface, and for the scale of the two end bays running the whole height of the house.

Plasterwork in House at Minsted.

Mr. George Jack received his training as a craftsman in the school of Philip Webb, and we see in these delightful examples of his plasterwork that love of animal life and floral forms which was so marked a characteristic of Philip Webb himself. It is plasterwork possessing a lively intimate quality, always of interest, yet kept properly subservient to the general architectural scheme. The modelling is free and vigorous, and there is a general feeling that the craftsman must have enjoyed doing his work.

Interior Bay of St. George's Hall.

This drawing, by Mr. E. N. Frankland-Bell, a former student of the Liverpool School of Architecture who is now a lieutenant in the Army, shows one complete bay of the large hall, some particulars of which were given in our issue for April 19, when we published a composition of details from the hall.

Phoenix Assurance Building, Charing Cross.

We have already published (in our issues for December 15 and 22, 1915) photographs of this beautiful little building of the early nineteenth century, and the measured drawing now reproduced (by Mr. W. J. Roberts, M.A., A.R.I.B.A., a former member of the architectural staff of H.M. Office of Works, now serving with the Royal Engineers) completes the record of a façade which will be sadly missed—for the building is marked down for demolition in the near future, in connection with the opening out of the Admiralty Arch at Charing Cross. Gandy, the architect of the Phoenix building (which was erected in 1805), was a pupil of James Wyatt.

ARCHITECTS AND MILITARY SERVICE.

A NUMBER of members of the Royal Institute of British Architects who are about to enlist in the Army or to be summoned to the Colours under the operation of the Military Service Acts have called the attention of the Council to the desirability of making arrangements to enable them to enlist in a selected corps so that they will have the advantage of serving with a number of men of their own class and profession.

With the approval of the Central Recruiting Depot arrangements have accordingly been made with the Queen's Westminster Rifles, one of the oldest and most distinguished of the London Territorial Regiments. Applicants must, of course, be fit for general service, and must be capable of passing the tests imposed by the regiment.

Any members (whether attested or unattested) who desire to take advantage of this opportunity should apply immediately to the Officer Commanding, Administrative Centre, Queen's Westminster Rifles, 58, Buckingham Gate, S.W.

They are invited to call on any week-day (except Saturday) at 2 p.m., and they should state that they desire to take advantage of the arrangements made with the Royal Institute of British Architects.

CORRESPONDENCE.

Portable Steel Buildings.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—Some few months ago I remember seeing an article on portable steel buildings, which described the erection of same somewhere near London. I should appreciate it if you could let me know where I could get particulars of these buildings, as I require one about 60 ft. to 70 ft. long by 18 ft. to 20 ft. wide immediately. As I remember it, the erection of these buildings was only a matter of hours, and I therefore wish to know whether the firm in question have any ready for delivery at once.

O. B. L.

Middlesbrough.

[In our issue for January 19, 1916, p. 30, we gave an illustrated description of "Standardised All-Steel Emergency Buildings," which our representative had seen in course of erection in a field at Buckhold Road, Wandsworth. As these buildings were constructed of pressed-steel units which could easily be adapted to the dimensions required by "O. B. L.," and as a building on this system could be completely erected in three or four hours, this is no doubt the description to which our correspondent refers. These buildings were of excellent appearance and of sound construction. Mr. J. M. Lawrie, the agent for the Trussed Concrete Steel Co. of America, Central House, Kingsway, London, W.C., would doubtless be glad to supply full particulars. —EDS. A. AND B.J.]

The Name "Coldharbour."

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—The quotation completing this interesting subject in your issue for last week is, I think, a parody on—

"Some say the de'il's deed, and buried in Kirkcaldy,
Some say he'll rise again, and dance the 'Hieland
Laddie!'"

Kensington.

JOHN M. FIFE.

BOOK NOTICES.

"Kidder" Up to Date.

"Kidder" is to the American architect and builder what "Rivington" is to the English, and, curiously enough, these two classics have been almost simultaneously recast and rewritten. Moreover, in each case, what was originally the work of one man has now been subdivided among several hands. In this respect, however, there is a noteworthy point of diversity. Whereas the re-writers of "Rivington" are nearly all architects, those of "Kidder" are nearly all described as engineers, with the natural result of a marked difference of character in the respective books. If each book is as truly representative as we may suppose it to be, it would seem to follow that whereas building in Great Britain is still in the hands of the architect, in America the engineering interest predominates. This impression, however, is not completely justified by the facts. While it is true that in the United States the mechanical details of construction, with respect to the larger schemes, are regarded as a matter for engineering specialists, nevertheless, the architect is by no means superseded. It is generally recognised that a wider outlook may be expected of him when he is freed from the bondage of detail; about which, however, he must have sufficient general knowledge to give him the predominating influence as supervisor. In America there is closer co-operation between architect and engineer than we have attained to in this country. Generally the association is casual, the parties coming together for some particular work; but there are many firms in which the professors coalesce in partnership. For example, one of the associate editors of "Kidder," Mr. Emile G. Perrot, is described as "of Ballinger and Perrot, architects and engineers."

"Kidder's Pocket Book," consisting of 1,816 pages of small (but extremely legible) type, and weighing two pounds, is a complete referendum for the American architect and structural engineer, and its memoranda are so comprehensive as to render the work a valuable addition to the technical library, public or private, of any nationality. In the index, which extends to five-and-forty pages, it would be difficult to detect any important omission, and there are included many matters, such as the seating capacity of theatres, contract forms, a list of "architectural societies and organisations of the world," and a bibliography of technical books, and many other interesting miscellanea which are not commonly found in works of this class, and while they perhaps unnecessarily swell the bulk of this phenomenal "pocket book," they most certainly reflect the editors' ambition of thoroughness and completeness, which, indeed, has been in all respects attained to a high degree.

"The Architects' and Builders' Pocket-book." A Handbook for Architects, Structural Engineers, Builders, and Draughtsmen. By the late Frank E. Kidder, C.E., Ph.D. Compiled by a Staff of Specialists, Thomas Nolan, Editor-in-Chief, Fellow of the Institute of Architects; Professor of Architectural Construction, University of Pennsylvania. Sixteenth edition, rewritten. Pages xxiv. + 1816, price 21s. net. New York: John Wiley & Sons, Inc. London: Chapman & Hall, Ltd., 11, Henrietta Street, Covent Garden.

Analytic Geometry.

As an introduction to the differential calculus this text-book is of considerable value. Discarding the masses of detail that at the outset of study would be merely confusing, and, indeed, are of doubtful utility to the student who does not regard mathematics as an end in itself, but rather

as a detail of professional training, the author expounds in clear and simple language, and illustrates by means of practical applications, the principles which must be mastered and the methods of applying them. Copious exercises are given, and the solutions to them are appended at the end of the book, which is therefore the more valuable to the student who has not the advantage of attending a class. The manual is a safe and sound introduction to its subject, and, indeed, to the science of mathematics generally.

"Analytic Geometry." By H. B. Phillips, Ph.D., Assistant Professor of Mathematics in the Massachusetts Institute of Technology. Pages viii + 198, price 6s. 6d. net. New York: John Wiley & Sons, Inc. London: Chapman & Hall, Ltd.

Paint and Colour Mixing.

It is not at all surprising that so valuable and practical a book as "Paint and Colour Mixing," by Mr. Arthur Seymour Jennings, should have reached a fifth edition, and those who are acquainted with the editor's works and methods need no assurance that the successive editions have been each and all revised not only with care and thoroughness, but with an unrivalled comprehensive knowledge of the subject. New chapters, on mixing and matching colours, straining colours, putty hard stopping, knife and brush filling, and on the standardisation and nomenclature of colours, have been added, and considerable additional space has been given to paint and colour mixing machinery. Everyone who knows from practical experience the inconveniences caused by the want of some standard system of naming colours will be grateful for Mr. Jennings's very judicious discussion of this vexed question. It should bring us a step nearer to the desired object. The hundreds of admirably printed samples of colours would make this manual a very valuable work of reference, even if it had no other merits; but in point of fact the book is an almost complete compendium for the painter, and contains much useful and suggestive information for the architect.

"Paint and Colour Mixing." A Practical Handbook for Painters, Paint Manufacturers, Artists, and all who have to mix colours. Containing over 300 samples of actual oil and water-paints and water-colours of various colours, and upwards of 1,500 different colour mixtures, with 17 coloured plates. By Arthur Seymour Jennings, F.I.B.D., etc. Fifth Edition. Pages x + 246, price 6s. net. London: E. & F. N. Spon, Ltd., 57, Haymarket, S.W. New York: Spon & Chamberlain, 123, Liberty Street.

THOUGHTS IN LIVERPOOL CATHEDRAL.

Of the three new cathedrals (says a writer in "The Times") that have been built in England since St. Paul's, Truro is a frank imitation or strict exercise in Gothic styles; and, with such dignity as it can, marks the fortunate close of the Imitation Gothic period. Westminster Cathedral, although original, and in a very considerable degree successful, is an exotic. Its style is based on nothing English, and will hardly influence English architecture. In Liverpool alone there seems to be a second blooming or ghostly revisitation of the true Gothic spirit; not a thing of great reality, or that can in any sense be regarded as an expression of anything belonging to its own day; but still a thing of beauty and dignity.

It is the scale of this building that will surely be its ultimate glory—not simply because it is big, but because the scale, allied with breadth and simplicity of treatment, seems to afford the happiest medium for the successful expression of

this modern transmigration of the Gothic spirit. The height of the choir from the pavement to the vault is 116 ft., and to the spring of the vault 84 ft., and the width of the central space is 87 ft.; thus even the choir is wider than those of Lincoln and York, and its vault is 30 ft. higher than that of Salisbury. It easily exceeds in dimensions any mediæval building in England. It will require a great deal of strong colour; but from the specimens of admirable glass that are already in place it is evident that this will not be wanting. Moreover, the orientation of the building north and south, instead of east and west, will produce some unusual and impressive effects of lighting.

One of its charms and one of its sincerities is that you cannot label its Gothic as either Early English, or Decorated, or Perpendicular. Neither is it a mixture of these; but one would say that the architect had first of all steeped himself in them all, and then put them away from his mind, and let his own invention, as inspired by them, have free play.

For the rest, the spirit of the work and of the workman is almost mediæval. The courses are quite irregular, depending on the size of the stones as they come and on the judgment of the men who are actually building. The dressing of the flat faces of the stones is rough and free.

LEGAL.

Builders' Claim for £97,000: The New Local Government Board's Offices.

Spencer Santo and Co., Ltd., v. The Commissioners of H.M.'s Works and Public Buildings.

May 11-17. Official Referee's Court. Before Mr. Pollock.

The hearing was resumed of this action, which was a claim for £97,109 as balance of charges under a contract for the new Local Government Board offices at Whitehall. (See our issue of May 17, p. 209.)

Mr. Holman Gregory, K.C., Mr. Compston, K.C., and Mr. Inman appeared for the plaintiffs and Sir R. Acland, K.C., Mr. Lowenthal, and Mr. Given for the defendants.

Mr. Holman Gregory, continuing his opening, said he would not dispute the fact that the architect, in reason, was entitled to make omissions, but it was for the Referee to say whether the omissions made had or had not altered the character of the work which the builders had contracted to carry out. The defendants contracted with the plaintiffs for them to do certain work which was to cost £473,000, which was to include all labour and general charges, and if the defendants called upon plaintiffs to do other work and abandoned part of the contract the plaintiffs were entitled to extra payment for the other work and for any loss of profit which might have been made from the work abandoned.

Mr. P. H. Patten, the foreman engaged on the job throughout, in the course of his evidence, said that before the contract was signed he commenced to lay out the work and the building was actually commenced in the earlier part of March. At that time he had no knowledge of the revisions which were going to be made. From time to time the plans were revised and variations made by the architect. Generally speaking, the building erected was skinned of everything that could be taken away from it. It was made more costly and was nothing like the building as originally designed. Orders were given continually for alterations in work after the work had been done. The elevation was practically

the same in appearance, but the details were altered and made less uniform. As to the brickwork, the walls were reduced in thickness to the extent of about $4\frac{1}{2}$ in.

The witness was subsequently examined upon minute details of the work which had not been done, by direction of the architect, upon which the plaintiffs would have made a profit and the amount of profit which would have been so made had the contract been carried out in accordance with the original drawings. On the question relating to extra work and omissions he said that the contract related to the construction of three towers, two of which were omitted, with the result that the plaintiffs had lost on the amount of brickwork involved. There were also omissions in the sub-basements resulting in a diminution in the brickwork to the extent of 20,000 ft. super. This was the cheapest part of the work, and went to make up the average upon which the contract was based. It was cheaper because, being on the lower level, no hoisting was required. Another item which went to make up the plaintiffs' claim was the variations which had been made in the height of some of the brickwork for which plaintiffs were entitled to make a charge beyond the contract price. There were numerous alterations in the windows, which increased the cost of labour and the smaller quantity of masonry, in parts, consequent upon the altered plans, involved quite as much cost for labour while at the same time it reduced the plaintiffs' profits. In some cases there was more labour expended upon the smaller quantities than there would have been upon the larger. In the original drawings there were fifty-one chimney stacks shown, twenty-eight to be built in stone and twenty-three in brick. The stone stacks were to contain originally 612 cubic ft. of stone, but under the altered plans they contained only 296 ft., and owing to the altered character of the work and the smaller blocks used more labour had to be expended upon the smaller than would have been expended upon the larger. There were many other alterations and variations of the plans, both in the structure and the internal arrangements, from the basement to the roof, including the drainage, which involved a large amount of extra cost upon the plaintiffs and caused delay.

The evidence in chief of this witness, which had already occupied five days, was not concluded when the hearing was adjourned.

Architect's Claim for Fees.

May 9. Liverpool Assizes. Before Mr. Justice Horridge and a Common Jury.

Mr. James Loudon, an architect practising in Liverpool, sought to recover £111 14s. for work done and money paid, the defendant being Mr. John Francis Kirby, timber merchant, of Liverpool.

It appeared that plaintiff was engaged by the defendant to prepare plans and quantities for a house at Birkdale. The defence was that the defendant told the plaintiff to prepare designs and plans and also to get put quantities for a house not to exceed a cost of £750 or £800. The defendant, it was alleged, suggested additions, such as a billiard-room, a motor-house, and extra bedrooms, and the cost rose up to about £1,847, and plaintiff's charges were made on that figure. Defendant said he repeatedly informed the plaintiff that he could not exceed the price of £800 for the house. Plaintiff eventually had a house built for £850.

Verdict for the defendant.

NEWS ITEMS.

South African Memorial to Captain Scott.

A memorial to Captain Scott, an argosy in stone on a pedestal, has been unveiled at Cape Town by Mr. Merriman.

L.C.C. Gift to Y.M.C.A.

The London County Council has given the old Haymarket Street fire station to the Y.M.C.A. for the soldiers.

A Memorial Vestry.

At Henley-on-Thames Parish Church a new vestry is to be built in memory of the late Rev. Canon Maul, rector for thirty-two years, and funds for the purpose amount to over £700.

The Restoration of Paisley Abbey.

The first stone of the work of rebuilding the large central tower of the Abbey of Paisley has been laid. The tower is the gift of Mr. Robert Allison, of Rosemount, Castlehead, Paisley. This tower forms part of the scheme of restoration which has been going on at the abbey for the last three years, and which, when completed, will form perhaps the most notable restoration which has yet been made in Scotland.

Builders' Accident Insurance.

In the report presented at the thirty-fifth ordinary general meeting of the Builders' Accident Insurance, Ltd., held at the registered offices, 31 and 32, Bedford Street, Strand, W.C., the directors stated that the premium income during the year had been well maintained, but that a falling off may reasonably be expected when the effect of the war on ordinary building operations had declared itself. The valuation of the investments as at December 31, 1915, showed a depreciation of £1,222 18s. 11d. The funds of the association, after allowing for the above depreciation, stood at £29,146 11s. 11d., as against £24,884 13s. 3d. at December 31, 1914.

New Dock for the Port of London.

Considerable progress has been made with the new deep-water dock designed to add to the accommodation of the Port of London. The undertaking, which was begun in August, 1912, involves the creation of an enclosed deep-water area of 65 acres accessible to the largest ships. It is situated immediately to the south of the existing Albert Dock. The entrance lock from the Thames will give admission to the largest ships afloat. It has a length of 800 ft., a width of 100 ft., and a depth below Trinity high-water mark of 45 ft. The walls of the lock have been constructed, and the bottom is now being put in. Provision is made for linking up the new deep-water dock with the Albert and Victoria Docks by means of a passage 100 ft. in width.

Mr. J. W. White, of Sunderland.

Mr. J. W. White, the well-known builder and contractor, has been co-opted a member of the Sunderland Town Council to fill a vacancy which has been caused through the elevation of Councillor A. Ritson to aldermanic rank. Mr. White has hitherto taken little active part in public life, although his fitness for it is recognised on all hands. He has held high positions in the building trade, being a past president of the Northern Counties Federation and also of the National Federation of Building Trades Employers, and he also had a seat on the important industrial council which was appointed some time ago to consider means for securing the due fulfilment of agreements

between employers and employed. Mr. White will be the second member co-opted on the Sunderland Town Council since the Order came into force.

GIFT OF ENGLISH FURNITURE TO THE VICTORIA AND ALBERT MUSEUM.

Mr. Frank Green, of Treasurer's House, York, has recently presented to the Victoria and Albert Museum a number of important pieces of English furniture, together with several other objects of considerable artistic interest. The furniture belongs for the most part to the period of the late Stuarts and William and Mary, and includes several types hitherto unrepresented in the Museum collections. Among them may be specially noted a pair of walnut chairs of about 1700, covered with embroidery in silk and wool, representing vases of tulips, carnations, and other flowers, and two stools similarly covered; also a single chair covered in finer embroidery with floral designs. Another chair, with a tall back carved in openwork and a seat covered with embroidery, belonging to the period of William and Mary, is illustrated in Macquoid's "History of English Furniture." Several interesting tables are included in the gift. Of these the earliest may be attributed to the later years of the seventeenth century. It has legs carved in open spirals, and a top decorated in marquetry and fitted with a panel enclosing a backgammon board. This table also is illustrated in Macquoid's "History." Another table of about the same period as the above is of gilt wood with gilt gesso top finely ornamented in French style, such as characterises the period of Louis XIV. A third specimen, a side-table, of gilt wood, in the style of William Kent, is a typical example of the massive furniture which adorned the great houses of England during the reign of George II. These pieces are exhibited in Rooms 55 and 56 of the Woodwork Galleries.

It is well known that the Victoria and Albert Museum urgently needs good specimens of English furniture, and Mr. Frank Green's generous gift is the more welcome at this moment when public funds are not available for making purchases. Moreover, pieces like these, which belong to the best period of English craftsmanship, are year by year becoming rarer and more difficult to obtain.

Of the other objects included in the gift the most important are a large cushion, covered with crimson velvet brocade in a bold design of floral devices within compartments, Italian weaving of the first half of the sixteenth century; a smaller cushion worked with a graceful pattern of flowering stems, a good example of Elizabethan embroidery, dating from about 1600; two chair-seats decorated with effective floral designs, English "petit point" work of about 1700; an interesting sampler panel of the same period, embroidered with a figure of Queen Anne; a punch-bowl of Chinese "famille verte" porcelain, K'ang Hsi period; and two Chinese ridge tiles with green and yellow glazes, surmounted by equestrian figures, dating from the Ming Dynasty.

Mr. Frank Green has also lent to the Museum a set of four valuable chairs of the time of Queen Anne, covered with Mortlake tapestry woven in wool and silk with designs of flowers.

CONCRETE AND STEEL SECTION

(MONTHLY.)

HANDLING CONCRETE FOR FLOOR CONSTRUCTION.

The accompanying illustration shows the plant employed for delivering concrete and material for floor construction at a large new hotel at Chicago. The plan is a cross with arms 47 ft. wide and 260 ft. long, and advantage was taken of the shape of the building to erect a double hoist for concrete and material near the centre of the structure in the angle between the south wings. The bulk of the floor area thus comes within a 100-ft. radius.

As the site is covered with fine beach sand, a road made of 3-in. by 8-in. planks laid flat was built to gain access to both sides of the stone and sand trenches shown in the illustration. These trenches are

80 ft. long and each holds 400 cub. yds. of material. A single 18-in. Weller belt conveyor under the central partition is fed with sand or stone as desired by removing successively the short 2-in. by 6-in. pieces laid at an angle over the opening directly above the belt. The belt delivers the material into a bucket elevator which raises it 60 ft. into the storage bins, where there is capacity for 250 cub. yds. of stone and half as much sand.

At the outer end of the dumping trench is a grating bridge for the convenience of dump wagons loaded with sand. The bottom of this area under the grating is sloped to the sand side of the trench. Most of the sand, however, comes in 5-yd. motor trucks. Under the aggregate bins and cement-storage structure there has been placed a 2-ft. slab of concrete to ensure

the exact alignment of the various shafts and machinery bearings. This slab is just covered by the ground water and has borne its load of $2\frac{1}{2}$ tons per sq. ft. without cracking or any apparent unequal settling. Concrete, waterproofed, was also used for the pit under the lower end of the bucket elevator, which is below the water line.

Electricity is used to drive all the equipment, a 50-h.p. double drum hoist being used for the concrete tower.

The order for concreting the floors, which followed closely the schedule formulated in advance, required three days for placing forms, reinforcing steel, pipes and conduits. The pipes and conduits occupy one-quarter of the floor area—6,000 sq. ft. The concrete in one $7\frac{1}{2}$ -in. floor slab and in the columns below it was placed in five hours, an additional ten hours being required to place the cement finish. It was intended to erect all the wings evenly, but by reason of delay in getting steelwork for the two east wings these fell behind for a time. By the tenth week, however, all of the fourth floor had been "poured," bringing the wings even.

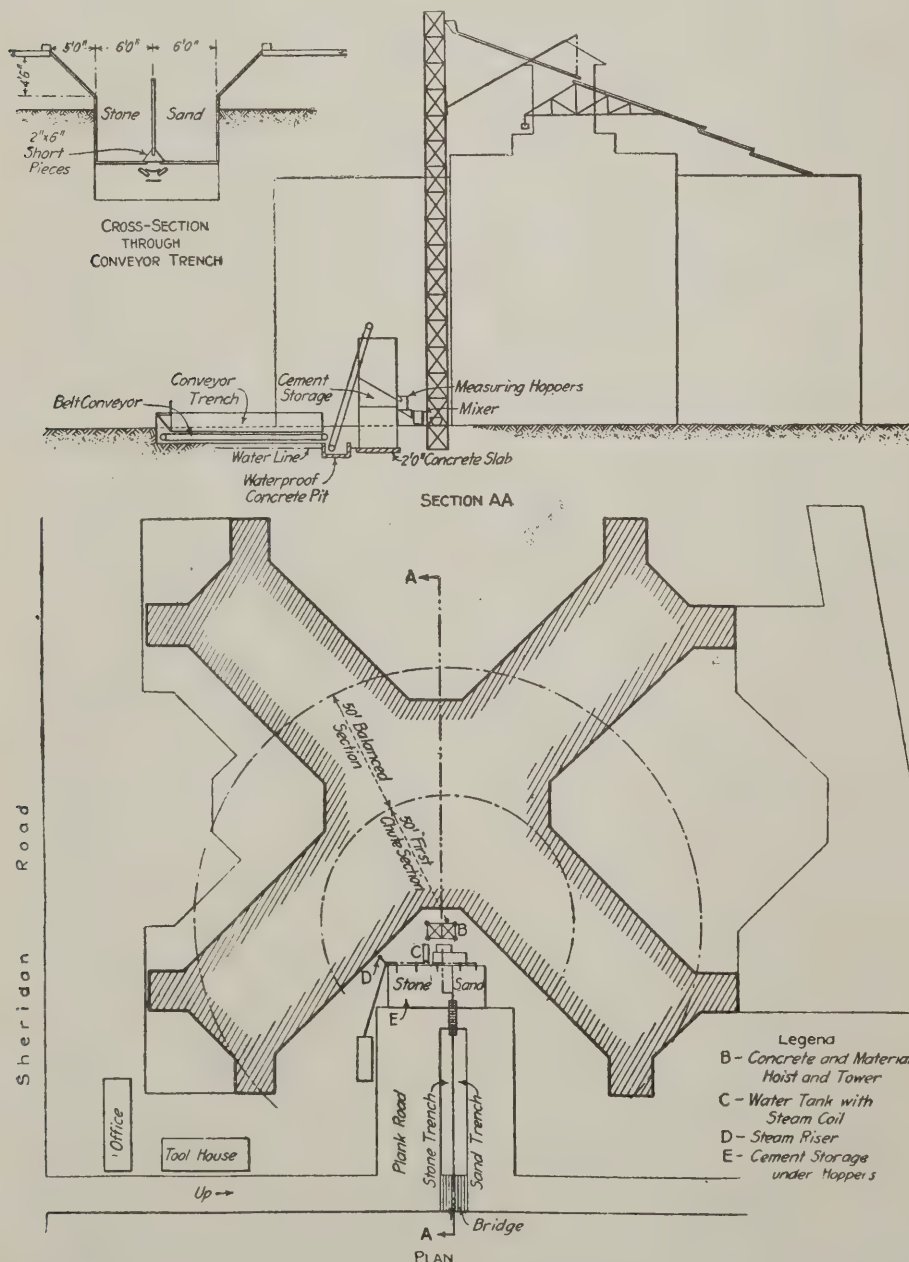
Forms for the floors were supported by 4-in. by 4-in. timbers spaced on 5-ft. centres. The forms were left in place two weeks, and after their removal extra form supports were placed at intervals under the floor slabs and left for some time. As cold weather ensued, a 75-h.p. boiler was installed and steam pipes were run into the trench and aggregate hoppers. A special water tank $1\frac{1}{2}$ ft. wide, 7 ft. deep, and $9\frac{1}{2}$ ft. long, with a steam coil through the centre, was set up above the automatic supply tank to the mixer. The temperature of the water in this tank was maintained at about 150 deg. Fahr.

To protect the "poured" concrete forty salamanders fired with coke were kept burning under the floor of each wing for several days after "pouring." Tarpaulins were hung around the sides to enclose the storey below the green concrete, the temperature at no time being allowed to get below 40 deg. Fahr. Tarpaulins over the top of the floor were supported on a temporary framework about 6 ft. above the floor, and a hose line supplied steam to keep this space heated for three days after the concrete was deposited.

Messrs. Marshall and Fox are the architects for the building, the concrete work being carried out by the Darling and Eitel Company, Mr. Wilbur S. Sample being the engineer and general superintendent for the contractors.

Class in Reinforced Concrete at Aberdeen.

The Principal reported to the Arts and Crafts Committee of Robert Gordon's Technical College, Aberdeen, that a representation had been made to him for the establishment this session of a class in the subject of Reinforced Concrete. Subject to its being made self-supporting, the Committee agreed to institute the class, which will be conducted by Mr. Alexander Cruikshank, head of the building department of the college. The fee for the course of ten lectures was fixed at £1 1s.



ARRANGEMENT OF PLANT FOR DELIVERING CONCRETE TO FLOORS OF NEW HOTEL.

ORE AND LIME BUNKERS IN REINFORCED CONCRETE.

BY HARRY C. RITCHIE,
ASSOC.M.Inst.C.E.

The structure described in this article forms one of the interesting features of an extensive scheme of improvements in connection with the mechanical handling of materials, recently carried out by the Brymbo Steel Co., Ltd., at their works near Wrexham.

Provision had to be made for receiving from a high-level railway siding passing through the works, daily consignments of iron ore and lime, and for the storage of several days' deliveries of these materials in elevated bins, from which supplies for the furnaces could be drawn conveniently and required.

The necessary storage capacity for ore was to be 500 tons, and for lime fifty tons, and the rail level of the siding at the point most convenient for tapping, on account of its proximity to the furnaces, afforded a height of approximately 24 ft. in which to provide this storage capacity and leave a clear height of 10 ft. 6 in. below the discharge openings in the bottoms of the bins, under which would run the trucks carrying the charges to the furnaces.

The site chosen for the bunkers was adjacent to, and running parallel with, existing low-level sidings, over which the high-level siding crossed (approximately at right angles) carried on a steel girder bridge with masonry abutments.

The lay-out and the intended working arrangement of the low-level rail tracks made it necessary to fix the site of the bunkers some 70 ft. to 80 ft. away from the high-level siding, so that the intervening space would have to be bridged to carry the main line traffic on to the bunkers.

Such were the general requirements of

the scheme, and the engineers of the Brymbo Steel Co., after consultation with the Trussed Concrete Steel Co., Ltd., decided to adopt reinforced concrete for the complete structure, on account of this method of construction affording not only economy in first cost, but a more pronounced advantage in cost of annual maintenance.

The view of the completed bunkers illustrates the manner in which the scheme was treated. The three nearest hoppers are for the storage of ore, each bin having a holding capacity of 170 tons, the fourth being the lime hopper with a capacity of about fifty tons.

The bridge connecting the hoppers with the high-level siding is of three spans, and was designed to carry the heaviest Great Western main line goods traffic, the abutment at the siding end of the bridge being one of the masonry wing walls of the existing girder bridge, referred to above, reconstructed and strengthened to take the additional load.

The two parallel beams carrying the rail track over the bunkers are supported by main beams spanning across from column to column, which cross beams, in the bunker portion of the structure, act also as the transverse vertical walls of the bins, and carry their proportion of the load from the hoppers to the bottoms.

The space between the rail-carrying beams is left open for the full length of the structure, and the ore bins are left entirely uncovered. The lime bin is decked over in reinforced concrete, except for the space between the rail beams, which is provided with a sliding cover to close the bin when not being charged.

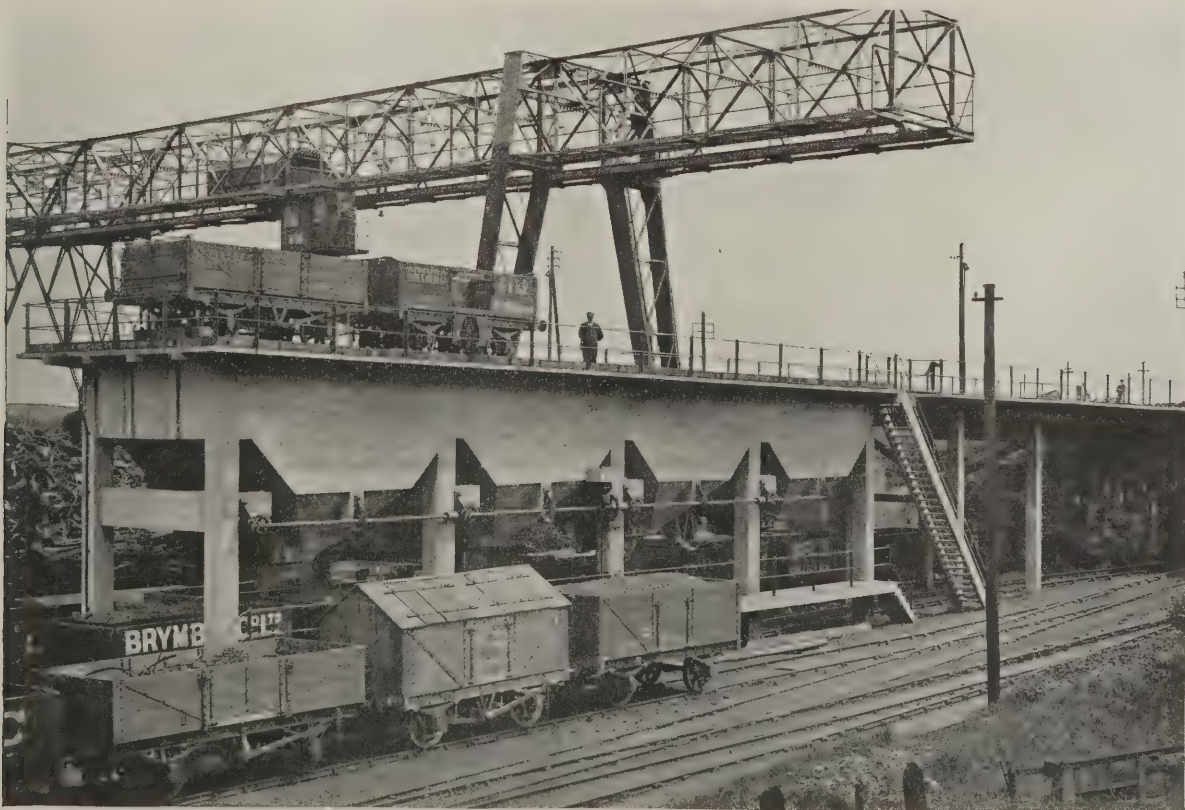
A reinforced concrete platform of uniform overall width is provided over the whole of the remaining portion of the structure, this platform being cantilevered out over the face line of the bunkers;

longitudinal deck beams carried direct on the columns continue this line of support over the bridge spans. The peculiar design of the bins was called for by the size and shape necessary for the discharge openings, and by the accommodation which had to be provided for the shafting and gearing of a somewhat complicated mechanical arrangement for controlling the discharge. The outline dimensions of lime and ore bins are identical, and, as will be seen from the drawings, are about 19 ft. by 15 ft. by 12 ft. deep. The two longitudinal sides are vertical for a depth of about 9 ft. from the top, whereas the transverse sides are vertical only for a depth of about 4 ft. The hoppers are sloped at an angle of 48 deg. in both directions.

Transverse beams spanning from column to column below the hoppers, carry the main supports for the discharge controlling apparatus; and brackets, projecting from the columns and from the bottoms of the bins, are provided as supports for the various parts of the gearing. An operators' platform cantilevered out from the columns at a height of about 5 ft. above ground level, runs along one side of the structure for the full length of the bunkers, and there is a reinforced concrete ladder spanning from the ground up to the main bridge deck.

The columns, carrying the hoppers and the bridge, are founded upon a raft, consisting of a rectangular slab 118 ft. long by 21 ft. wide, which reacts on two parallel continuous beams running longitudinally from end to end of the slab, under the centre lines of the two rows of columns.

The details of the principal reinforced concrete members are as follows: The rail bearers are designed as continuous beams over the six intermediate supports, the first bridge span of 37 ft. being calculated for a total train load having an equivalent distributed value of 2.88 tons per lineal foot of track; the second and third spans, each of 17 ft. 6 in. between the first



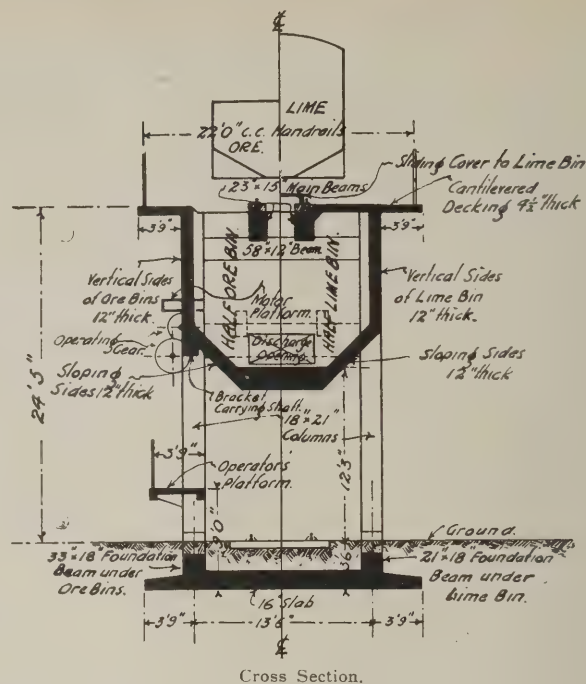
ORE AND LIME BUNKERS, IN REINFORCED CONCRETE, AT BRYMBO STEEL WORKS, WREXHAM.

and third column supports, for equivalent distributed loads of 3.6 tons per lineal foot; and the fourth span of 19 ft., extending over the lime bunker, for 3.47 tons per foot run of track, the whole of these first four spans, commencing from the high level siding end of the structure, being designed to take the heaviest Great Western Railway goods engines. The remaining three spans of 19 ft., carrying the rails over the three ore bins, were calculated for a train of the Brymbo Steel Co.'s twenty-ton capacity hopped ore wagons, exclusive of locomotive, giving an equivalent distributed load of about 1.75 tons per lineal foot of track.

The maximum values of the positive and negative moments, on the seven spans and over the supports, were based upon the most effective dispositions of the above train loads. On the 37-ft. span these bridge members are 50 in. deep by 15 in. wide, designed as L beams in conjunction with the $4\frac{1}{2}$ -in. deck slab, and are provided with 12.65 sq. in. maximum cross sectional area of tensile reinforcement, and the same sectional area of top compression steel, seven out of the group of ten main tension bars being bent up, singly, from point to point as required, to act as shearing reinforcement in the usual way, giving a sectional area of 2.2 sq. in. of steel per lineal foot of beam in resistance to the maximum shear stress.

The two parallel beams are cross stiffened at three intermediate points by 12 in. by 12 in. braces reinforced with four bars each of .39 sq. in. sectional area, braced transversely by means of 3-16 in. diameter ties at 9 in. c.c. The rail beams on the 17 ft. 6 in. spans and on the 19 ft. span across the lime bin are designed in a similar manner, the outline dimensions being 23 in. deep by 15 in. wide, and each has 6.76 sq. in. tensile reinforcement and 6 sq. in. compression steel. Each bay has one 12 in. by 12 in. cross stiffener, as above described, at the centre of the span. These beams continue of the same outline dimensions over the three 19 ft. spans, crossing the ore bunkers, the cross sectional areas of tensile and compressive reinforcement being reduced to 3.38 sq. in. and 1.69 sq. in. respectively, on account of the lighter loads.

The continuous reinforcement over supports is provided partly by continuing a



Cross Section.

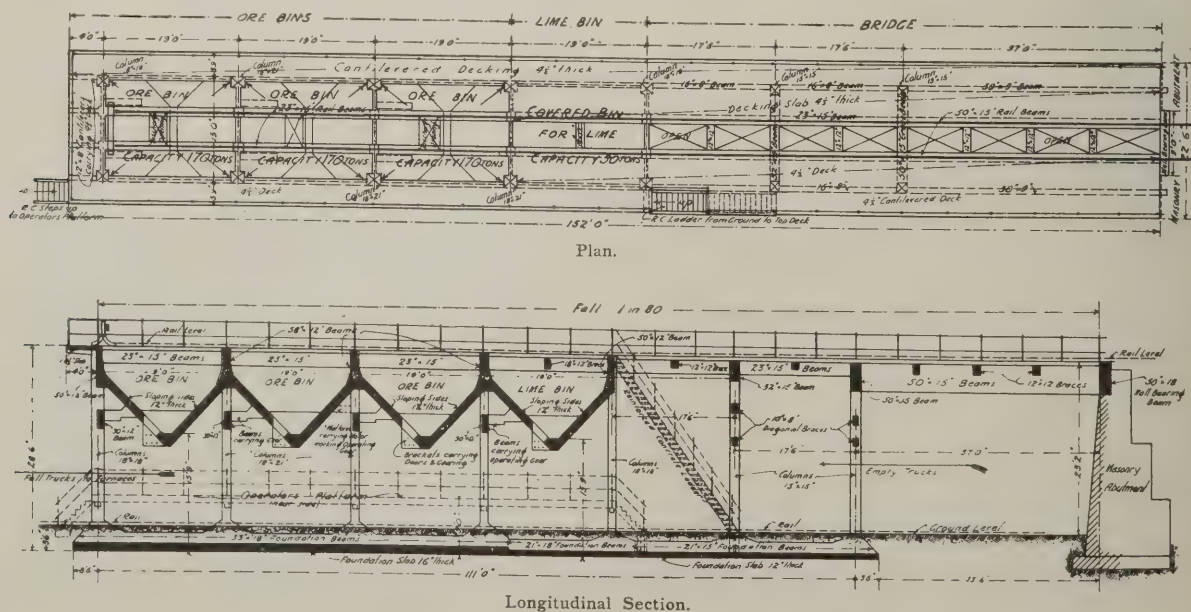
number of the cranked up tension bars from each bay across on to the adjoining spans, and partly by the addition of extra rods. The transverse beams of 13 ft. 6 in. effective span bridging across from column to column, and carrying the loads from the rail beams are, at the first support, 50 in. deep by 15 in. wide, with 7.59 sq. in. tensile reinforcement and 5.06 sq. in. top steel; at the second support, 32 in. deep by 15 in. wide, having 7.06 sq. in. of steel reinforcement in both tension and compression.

The third cross support, which also carries its proportion of the load from the lime bin, of which it forms a vertical side, is 50 in. deep and 12 in. wide reinforced with 8.8 sq. in. steel in tension, and in compression by 1.69 sq. in., contained in spiral reinforcement composed of two overlapping helicals of $\frac{1}{4}$ -in. diameter round rods coiled to 8 in. diameter and $1\frac{1}{2}$ -in. pitch, embracing the full width of the beam.

The end supporting beam forming the vertical wall of the end ore bin is of the

same dimensions and designed similarly as also are the three cross beams which form the vertical division walls between the ore hoppers, but the latter are 8 in. deeper. All these beams, which act also as bin sides, are additionally reinforced close to their vertical faces, between column and column, to resist the horizontal moments due to the pull from the loaded hoppers bottoms, those between the ore bins having a group of three bars each of 1 sq. in. section on each vertical face, while those forming the end walls of the lime bin and the end ore bin have the same sectional area of tensile reinforcement, but on their inside faces only. The sloping bottoms of the bins are 12 in. thick in each case, and are reinforced in both directions, having a .68 percentage of steel, running both ways, in the case of the ore bins, and .12 per cent. in the lime bin.

The lower edges of these sloping slabs react upon a tension ring formed round the rectangular discharge openings, the cross sectional area of these rings being, i



Longitudinal Section.

ORE AND LIME BUNKERS, IN REINFORCED CONCRETE, AT BRYMBO STEEL WORKS, WREXHAM.

the case of the ore bins, 7.59 sq. in., and in the lime bin 4.59 sq. in. In each case this tension ring is made up of a group of six bars, round which are hooked the ends of the bars forming the sloping slab reinforcement.

In the ore bins these tension rings are suspended from the beams forming the vertical sides by means of eight raking bars each of 1 sq. in. section, in the direction of the long slope, and six bars of the same section in the direction of the shorter slope. A similar arrangement, but with lighter section suspension bars, is provided in the lime bin. The longitudinal vertical walls of the bins are reinforced in both directions to resist the horizontal pressure from the ore and lime, and are also designed as beams 110 in. deep by 12 in. wide to carry their proportion of the load from the hoppers bottoms and from the cantilevered deck on top.

The columns carrying the bunkers are of rectangular section, measuring 21 in. by 18 in. in the case of the intermediate supports, and 18 in. by 18 in. in the two end supports, the 18-in. dimension of the former being in the transverse direction of the structure. The 18-in. square columns are reinforced vertically with four 1 sq. in. section bars, laterally stiffened by means of $\frac{1}{4}$ -in. diam. binders spaced 9 in. apart, and the 21 in. by 18 in. columns have six vertical bars, each of 1 sq. in. section, which are laterally reinforced every 9 in. in height by means of two interlocking rectangular ties of $\frac{1}{4}$ -in. diam. round steel. The columns supporting the bridge are 15 in. square reinforced with four vertical rods, each of .77 sq. in. section, each pair of columns being crossed braced as shown on the drawings.

The longitudinal beams of the foundation raft, as before described, vary from 33 in. deep by 18 in. wide under the ore bins to 21 in. deep by 15 in. wide under the lime bin and bridge supports, being haunched under each column, and are heavily reinforced as continuous beams to distribute the load from the columns over the foundation slab, which is designed to spread the ground pressure to $\frac{3}{4}$ ton per sq. ft.

The base slab cantilevers out for a distance of 3 ft. 9 in. on each side, beyond the centre lines of these longitudinal beams under the columns, and is 16 in. thick under the columns carrying the bunkers and 12 in. thick under those carrying the bridge, in each case being reinforced in the top of the slab between the beams and in the bottom of the cantilevered slab projecting beyond the beams.

The detailed design of the reinforced concrete was based upon the following maximum allowable stresses:

Concrete in compression in both beams and columns	... = 600 lb. sq. in.
Concrete in shear	... = 60 lb. sq. in.
Steel in tension	... = 16000 lb. sq. in.
Do. in shear	... = 12000 lb. sq. in.
Do. in compression	... = 15 × stress per sq. in. in surrounding concrete.

The concrete aggregate used was Minera stone broken to pass $\frac{3}{4}$ -in. sq. mesh, but rejected on 3-16-in. mesh, and the proportions of the concrete were the usual 4:2:1 mixture.

The steel reinforcement was of the quality called for by the British Standard Specification for mild structural steel, about fifty-two tons of Kahn trussed and Kahn rib bars being used.

On account of the complicated character of the mechanical gear for operating the chutes, it was imperative that the reinforced concrete structure should be executed strictly in accordance with the specified dimensions and levels, as in certain situations even a very slight discrepancy would have rendered the gear unworkable. An almost precisely similar mechanical arrangement had been used previously in connection with a series of hoppers built in structural steel, in which material working to exact measurements is obviously a much more simple matter than is the case when dealing with such a material as concrete.

At the outset, some anxiety on this particular point was expressed, but by careful consideration of this matter when designing the details of the reinforcement, and by careful construction and erection of the temporary timber moulds, with a free use of wood templates representing all the connections between the gearing and the concrete structure, perfectly satisfactory results were obtained, and the plant has now been in successful working operation for several months.

The total cost of the reinforced concrete structure amounted to £1,553. The work was carried out by Mr. W. H. Brocklesby, contractor, of Birkenhead, under the supervision of the District Engineer of the Trussed Concrete Steel Co., Ltd., who were responsible for the detailed designs.

REINFORCED CONCRETE ROADS

To-day, writes Mr. W. Matthews Jones, city engineer, Chester, as quoted in "Road Reinforcement," a publication issued by the British Reinforced Concrete Company, Ltd., of 1, Dickinson Street, Manchester, and 20, Victoria Street, Westminster, a road cannot be constructed to meet every form of traffic, and engineers and surveyors have been greatly puzzled as to what is the best thing to do. The old method was to put in a concrete foundation 6 in. in thickness for wood or stone sett paving, and this was nearly always considered a sufficient thickness for foundation work. But that time has gone, and the surveyor must now calculate as far as possible the weights that are likely to pass over the roads. He must also take into consideration the nature of the soil underneath his concrete foundation, and design his foundation and surface covering to suit the traffic above and the soil below.

In Chester reinforced concrete roads have been constructed, as well as ordinary concrete without reinforcement, and such concrete has been brought up to the surface for the traffic to pass over the same. Seven or eight years ago a piece of ordinary concrete was laid in a certain road here without reinforcement about 7 in. in thickness. Unfortunately, in my opinion, it was opened too soon, allowing the traffic to pass over before it had become thoroughly set, and the result was that although the concrete did not actually break up there was certainly a wavy movement formed in the surface of the concrete.

A year or two after this, in two of our narrow roadways where the carriage-ways are only wide enough to put down a single line of tram-track, I did, where the tramway turn-outs come in the narrow strips, which are about 6 ft. wide on either side of such turn-outs, fill in the surface with ordinary concrete between such tramway rails and the kerbs, allowing plenty of time for this concrete to set before the traffic was allowed to pass over the same. I am

pleased to be able to say that this concrete stood a long time without any appreciable wear. In fact, during the five years that it has been down, the macadam road surface at either end has so worn with the traffic that it has had to be sacrificed and re-macadamed no less than four times, whilst the concrete surface itself has not been touched, but this year it will require something doing to it.

Three or four years ago notices were served on property owners with regard to the making of a street under the Private Street Works Act. The construction of the carriage-way specified was 9 in. of hand-pitched rock foundation, 3 in. of roach covering, and 6 in. of broken granite, thoroughly consolidated by the steam road roller. The owners approached the corporation with a view to a cheaper road being constructed. I was then asked by my committee to consider the matter, and after very careful thought and consideration I decided that I would try a reinforced concrete carriage roadway. The length of the road was 950 ft., with a carriage-way of 20 ft. wide. I might say that the concrete road surface is everything that could be desired. The substratum was of clay. One side of the road was entirely built upon, and there is a fair amount of traffic over the road, which leads to a brick works, 40 to 60 tons per day passing over it when the brick works are in full swing. It also leads to other works in addition to these brick works.

Since this road was constructed the whole of the materials for about twenty-five houses have been carted over this surface and there is no sign of wear on it. The concrete was 6 in. thick and was reinforced. For a length of about 400 ft. out of the total length one side of the road was a sheer bank down to clay pits, in many places 20 to 25 ft. deep, the distance of the edge of this bank being in many cases not more than 6 to 8 ft. away from the kerb forming the carriage-way.

There can be no doubt in my mind, after carefully watching this road, that reinforced concrete was the cheapest and best thing that could be done here. I now believe that if the original intention of putting a macadam road had been carried out, there would have been a considerable amount of trouble and maintenance, for I think the actual steam road rolling and the weight of the other traffic passing near the edge of the bank already referred to would have pushed the bank out where it had no support and so have kept continually dropping the roadway surface.

My council were so satisfied with this road after two years' wear that they gave me instructions to do another roadway in the centre of the town, and which is known as "White Friars." In this street another difficulty had to be considered, as the carriage-way varied from 14 to 18 ft. wide.

There is a considerable amount of traffic passing over this area and one had to consider whether (in a narrow carriage-way like this) reinforced concrete would stand. However, after taking careful observations of the traffic conditions, I eventually decided to put in a reinforced concrete road—the original road surface being one of wood blocks with a concrete foundation which had been down for something like fifteen or sixteen years and had been renewed in patches practically all over its surface. When the wood blocks were taken up it was found that many trenches (gas, water, electric light, and drains) had been cut in the concrete foundation and that these had never been made as good as they ought to have been. The bad portions of the weak concrete where such

trenches had been made were cut out and relaid with a good quality concrete—6 to 1—and then on top of this old foundation 6 in. of granite concrete was laid in the proportions of 5 to 1 and reinforced with B.R.C. Fabric. After two years' wear the road surface is one of the best that I have in Chester to-day.

In my opinion reinforced concrete carriage-ways have now passed from the "experimental" stage and have become a "certainty."

REINFORCED CONCRETE BUILDINGS IN A FIERCE FIRE.

Convincing evidence of the effectiveness of reinforced concrete as a fire-resistive construction is furnished by the fact that three reinforced-concrete buildings directly in the path of the Paris, Tex., fire were the only buildings that came through practically unharmed. This fire was extremely destructive, ranking as the fourth of the great fires in America. The total losses are estimated between \$10,000,000 and \$12,000,000, about \$4,500,000 being, it is understood, covered by insurance.

There were three reinforced-concrete buildings (says the "Engineering Record," of New York) in the direct path of the flames, and these are the only structures so located which now remain standing. The least damaged of these is the Wise apartment house. A livery barn at the rear and a residence on the south side of this building were completely destroyed, and on the north side a store building full of merchandise stood within 10 ft. of the apartment. The heat was so intense that the interior furnishings must have caught fire from radiation alone. All the windows on this side were of glass with steel frames, and every window was shut. Not a pane of glass came out, although the glass melted and flowed, bulging badly and cracking extensively. The upper half of the windows were ribbed wire glass and the lower half of glazed wire glass.

The ribbed glass bent much more than the glazed, and in one case actually flowed from the top and the pane curled over.

The building which ranks second in small amount of damage done by the fire is the Gibraltar Hotel. This structure also had other buildings burned on three sides of it. The two sides of the hotel were equipped with wire-glass windows and steel sash, which excluded the fire. The rear of the building, however, was equipped with wooden sash and plain glass, and the fire soon found its way through these openings. Everything composed of wood or other combustible material was entirely destroyed, except on the ground floor and in a few of the front rooms.

All partitions were constructed of gypsum block, and although in most cases the plastering was entirely removed from the walls, the blocks remained intact. There is no sign of damage to any concrete in the building, and the steel-framed windows, although ruined, performed their function and can even now be raised and lowered. The elevators, inside fire-proof walls and steel doors, remained in running order, and the refrigerating plant in good working condition. The estimated damage to the building was about 42 per cent.

The third building was the First National Bank. Buildings were destroyed completely on all four sides of this structure, and it is reported that these buildings were also dynamited in an attempt to check the fire. The west and north sides were equipped with wire-glass and steel sash, and in every case the windows remained intact. The south and east sides had plain glass windows, and, with a few exceptions on the fifth floor, these are entirely gone. With the exception of the fifth and ground floors, there is nothing left in the building but the reinforced-concrete columns, beams, and floors.

In some cases the reinforced concrete in this building was badly damaged, probably due to the effects of dynamiting the adjacent building. Several of the beams cracked badly, and the west wall

separated from the rest of the building. In two cases the beams failed so badly that a continuous solid concrete wall was built under the failed sections. Practically every column is being strengthened by the addition of $3\frac{1}{2}$ to 4 in. of concrete on each side.

The floor was constructed of T-beams and a 5-in. slab. For beams which are in very bad condition, 1 in. or more of the floor surface is removed and twelve holes are drilled. Small angles are placed on the lower corners of the beams and U-bolts are inserted and drawn up with plates and bolts, the U-bolts being spread at the top in order to get good bond between the new steel and new concrete. Reinforcing rods are placed in position, and the forms built around the beams. New concrete is then poured through the holes made for the U-bolts and through additional holes made along the length of the beams. The depth of the beam is thus increased by $3\frac{1}{2}$ to 4 in., and the width by 6 to 7 in.

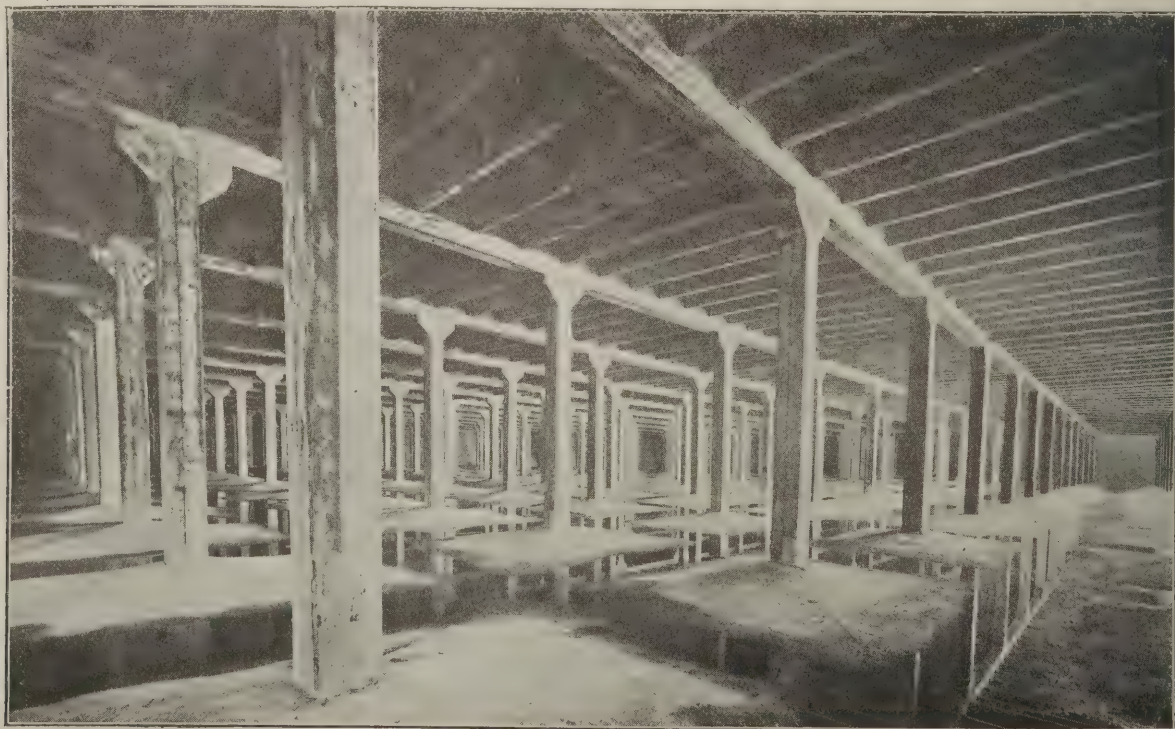
Every fresh instance confirms the already high reputation of reinforced concrete as a fire-resistant.

A CANADIAN RESERVOIR.

In a paper read at a recent meeting of the Concrete Institute it was suggested that concrete should be proportioned 3, 1, 1. We now reproduce a photograph of a large reservoir for which 4, 2, 1 concrete was used. This reservoir has a capacity for 18,000,000 gallons, and is probably the largest in Canada. A considerable amount was saved owing to the fact that Pudlo was used for waterproofing the cement.

Of the twelve waterproofers tested, Pudlo was the only one to stand the severe pressure, and it resulted in over forty tons being ordered for the construction of this huge reservoir.

The manufacturers of Pudlo, Messrs. Kerner-Greenwood and Co., of King's Lynn, will be pleased to send to anyone interested further particulars of this economical method of waterproofing concrete.



A CANADIAN RESERVOIR IN REINFORCED CONCRETE.

ROAD PROBLEMS AND FINANCE.

At the Arterial Roads Conference, held at the Middlesex Guildhall, Westminster, on May 19, a letter was read from Mr. Walter Long stating that, unhappily, the war had rendered impossible the hope that any recommendations they might make, involving the expenditure of large sums of money, could be brought into operation for a very considerable time.

A resolution was passed urging that immediate steps should be taken to induce local authorities to secure the reservation of land required for the arterial roads by exercising their powers under the Town Planning Act; and Sir Aston Webb secured the adoption of a motion, brought forward on behalf of the Royal Institute of British Architects, declaring that it was imperative that steps should be taken to secure the routes of the new thoroughfares recommended by the Conference. There had, he said, been extraordinary unanimity on the main lines of the arterial roads, and he feared that their time and labour would be wasted unless the Government saw fit to give some statutory powers for securing the lines of route.

AWARD OF THE HENRY SAXON SNELL PRIZE.

The subject given in 1915 for the essay in the Royal Sanitary Institute competition for this prize was "Suggestions for Improvements in the Sanitary Arrangements and Appliances Suitable on Board Ship for (a) Passengers and Crew; (b) Cattle and Other Live Stock." Seven

essays were sent in, and they have been brought under the consideration of the Council. The adjudicators for the competition were W. Collingridge, M.A., M.D., LL.B., A. Wellesley Harris, M.R.C.S., the late Herbert Williams, M.D., and J. J. Welch, M.Sc., M.Inst.C.E., M.I.N.A., Professor of Naval Architecture, Armstrong College (University of Durham), nominated by the Institution of Naval Architects. Acting upon the advice of the adjudicators, the Council have awarded the prize offered of fifty guineas and the silver medal of the Institute to Wm. Hanna, M.A., M.D., Assistant Port Medical Officer, Liverpool, writing under the motto "Nautilus."

TRADE AND CRAFT.

Andrews-Hawksley Patent Treads.

We are informed that Messrs. Hughes, Bolckow and Co., Ltd., of Middlesbrough, Newcastle and Blyth, have purchased the



business carried on by The Andrews-Hawksley Patent Tread and Engineering Co., Columbia Works, Poplar, E., and that the plant and machinery in connection therewith have been removed to Battleship Wharf, Blyth, where in future the business of manufacturing these well-known stair treads will be carried on. The Andrews-Hawksley Patent Tread has been

before the public for a great number of years, and a large number of these treads in use at the various railway stations throughout the kingdom testify to their durability. In connection with their manufacture Messrs. Hughes, Bolckow and Co., Ltd., will use their old seasoned "battleship timber oak" and teakwood, which will naturally further enhance the high reputation which these patent treads have deservedly acquired.

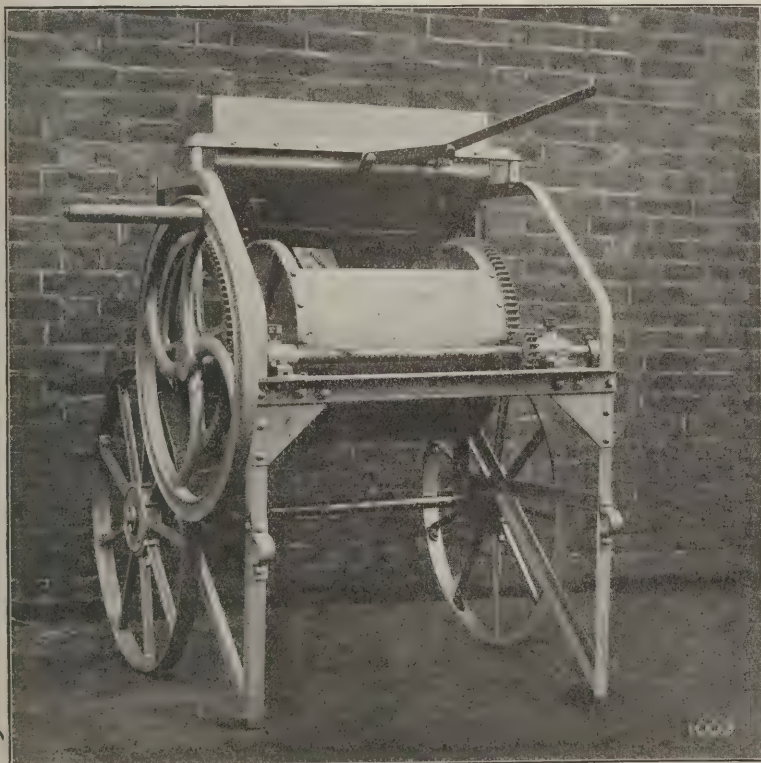
THE INSTITUTE OF PLUMBERS.

The tenth annual meeting of the members of the Institute of Plumbers was held in the Council Chamber of the Ilkley Town Hall on May 17. Mr. T. E. Hill, of Birmingham, president, occupied the chair, and the large number of members present were welcomed by Councillor William Prest, A.M.I.C.E., chairman of the Ilkley District Council.

Mr. John Allinson, of Gateshead-on-Tyne, who was elected president for the

ensuing year, urged that, with reference to recruiting, the plumbing trade should be left a safety margin of plumbers to carry out work necessary for the public health.

The vice-presidents elected were Messrs. James Wild (Rochdale), E. K. Lawson (Hull), and H. A. Ward (Sheffield). Messrs. Beal, Bolton, Butterworth, Cox, and Hill were elected to the Council.

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LATE CONTRACTS, etc.

SANITARY ENGINEERING.

June 5.—**SEWER.** Auckland.—Providing and laying down about 389 yards of 9-in. glazed earthenware pipe sewer, and relaying about 244 yards of 9-in. cast-iron pipes, together with manholes, etc., at Evenwood, for the Rural District Council. Particulars from T. Robson, P.A.S.I., Sanitary Surveyor, 9, Cradock Street, Bishop Auckland.

PAINTING.

May 29.—**PAINTING, ETC.** Finchley.—Annual repairs and painting of the Council schools, for the Urban District Council. Particulars from the Secretary, Education Office, Church End, Finchley.

ROADS & CARTAGE.

May 16.—**ROADWAY.** Hebburn.—Laying tar macadam roadway, channeling, etc., in Tharsis Road, Hebburn, for the Hebburn Urban District Council. Particulars from the Surveyor's Office, Argyle Street, Hebburn.

June 3.—**GRANITE.** Worsborough.—Supply of 2½-in. broken granite, 2½-in. tarred dross, dross chippings, and fine limestone asphalt, for the Urban District Council. Particulars from J. Whitaker, Surveyor to the Council, Saville House, Worsborough Bridge.

MISCELLANEOUS.

May 30.—**MATERIALS.** London, E.C.—Supply of builders', engineers', plumbers', gasfitters', and electricians' ironmongery and general stores, for the Metropolitan Asylums Board. Particulars from the Office of the Board, Embankment, London, E.C.

June 3.—**MATERIALS.** South Hetton.—Supply of the following materials, for the South Hetton Coal Co.: Timber (English only), oils, iron, castings, wire ropes, and other colliery stores, except electrical. Particulars from J. R. Lambert, South Hetton, near Sunderland.

June 10.—**MATERIAL.** Tyldesley.—Supply of the following material for the Urban District Council: Cast-iron pipes and specials (gas and water), steel mains, wrought-iron tubes and fittings, lead pipe (gas and water), gas meters (ordinary and

prepayment). Particulars from Mark Newsome, Gas Engineer, Gasworks, Tyldesley.

No Date.—**POSTS.** Helmington Row.—Supply of fifty posts, about 5 ft. 6 in. long, and sixty rails, 12 ft. long, suitable for field fence, for the Parish Council. Particulars from William Love, Clerk, Watling Terrace, Willington, Durham.

Admiralty Housing at Strood.

Over £15,000 is to be spent in building houses for Admiralty workmen by the Strood Rural District Council, the Admiralty to grant a subsidy of £107 per house.

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THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, May 31, 1916.

Volume XLIII. No. 1117.



THE SCOTT MONUMENT, GEORGE SQUARE, GLASGOW.

(From a drawing by Muirhead Bone.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

MAY 31, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1117.

EDITORIAL.

ANXIETY as to the rebuilding of Dublin is being freely expressed. It is feared that the very natural desire to resume business at the earliest possible moment may defeat the hopes of those who are pressing for a scheme of reconstruction on town-planning principles. A Bill, however, that is being drafted by the Corporation, seeks powers to plan the area and impose conditions as to the size and style of buildings; to acquire compulsorily and at a fair charge any sites that may be required for a general scheme; and to obtain a Treasury loan from which to grant advances to those who will undertake to expend on their buildings a sum greater than that allowed to them for compensation.

* * * * *

Facilities for such a Bill have been promised by Mr. Asquith, but it does not necessarily follow that the measure could survive serious opposition; and unless it make provision for full centralised authority to control the rebuilding, and to effect certain very desirable street-widenings, the measure will be hardly worth the trouble and expense involved in getting it through. It is, of course, quite right and proper that the tradesmen whose business premises have been wrecked should in every case receive fair compensation; but it is surely not unfair to insist that those who wish to rebuild must conform to a general scheme. In these days of benevolent despotism, when individual opinions on daylight, night-light, and the "liberty of the subject" generally, are subject to a considerable discount, there should be no difficulty in securing submission to a small matter of town-planning. What is more formidable is the question of funds. Let it be admitted that this is no time for lavish grants; yet, nevertheless, the circumstances being wholly exceptional, and indemnity being inevitable, it would be good civic and political wisdom to meet the occasion with a generosity of which the resultant reconstruction of the Sackville Street area would be a record and a monument. Alternatively, it might easily be construed as a monument to meanness rather than to magnanimity.

* * * * *

This seems to be an opportune moment for reviving the question as to what has become of the designs submitted in the Dublin Town Planning competition which was promoted by the executive committee of the Civic Exhibition, Ireland, 1914. It was called "a competition for the improvement and extension of Dublin," and the Earl of Aberdeen, then Lord-Lieutenant of Ireland (he resigned, it will be remembered, last year), was said to have offered a premium of £500 to be awarded to the author or authors of the design placed first. Designs were to be delivered on or before September 1, 1914, addressed

"to The Town Planning Competition, the Civic Exhibition, Linenhall Buildings, Dublin, Ireland," and the premiated design and report were to become the property of the Housing and Town Planning Association. Other designs were to be returned to competitors, but the Association was also willing to preserve for reference or exhibition the originals (or copies) of designs awarded honourable mention, and to lay them, along with the premiated designs, before the City Corporation and the Government, with the recommendation that in the event of any plan or suggestion being selected for execution this should be arranged for with the designer.

* * * * *

It was made quite clear that this was an academic competition. "The committee," it was stated, "are not yet in a position to foresee the requirements and future developments of Dublin with sufficient definiteness to justify them in promising to recommend for execution any of the town plans which may be submitted in this competition. The object is rather to elicit plans and reports of a preliminary and suggestive character, and thus to obtain contributions and alternatives which may be of value towards the guidance of the future development of the city in its various directions." A guinea was to be sent by competitors, and this sum was to be applied towards the cost of supplying books, maps, etc., to candidates. This competition still awaits assessment, and the present emergency surely denotes the psychological moment for putting the matter in hand. Among the schemes sent in, there may be excellent suggestions that can be applied locally without prejudice to a large general scheme. No doubt the Corporation are aware that these materials are ready at hand; but, to make quite sure about it, the Irish Institute should jog the official memory; also that of the promoters of the competition.

* * * * *

An important decision as to the position of the "third surveyor" appointed under section 91 of the London Building Act, 1894, was given by Judge Cluer at the Shoreditch County Court in a case reported this week in our Legal news. His Honour held that "if it was the practice amongst surveyors for the third to issue *solus* awards, then the sooner the practice was altered, the better for them, as it was illegal." This judgment will no doubt give a shock of surprise to those surveyors who have issued *solus* awards without the slightest suspicion that the practice was illegal; but a careful re-reading of section 91 of the Act seems to confirm the county-court judge's decision. In clause (1) of this section it is provided that "where a difference arises between a building owner and an adjoining owner in respect of any matter arising with

reference to any work to which any notice given under this part of the Act relates, unless both parties concur in the appointment of one surveyor, they shall each appoint a surveyor, and the two surveyors so appointed shall select a third surveyor, and such one surveyor or three surveyors or any two of them shall settle any matter from time to time during the continuance of any work to which the notice relates in dispute between such building and adjoining owner, with power by his or their award to determine the right to do, and the time and manner of doing, any work, and generally any other matter arising out of or incidental to such difference."

* * * *

It seems quite clear from this that the intention in appointing a third surveyor is not to secure an umpire but to avert the deadlocks of equal division of opinion; for it is expressly stated that "any two of them" shall settle any matter in dispute. It follows logically that all three surveyors have an equal voice, that in default of unanimity they are bound to accept the decision of the two-to-one majority, and that consequently, having accepted it, they should issue a joint award, or at least a majority award, signed by the majority, and perhaps countersigned by the dissident. Nevertheless, the third surveyor has considerable reason for supposing himself an umpire, since he obviously holds a quasi-judicial appointment, whereas the two surveyors who jointly select him have been themselves selected by opposing parties. In theory, the two surveyors have the detachment of independent professional minds; in practice, they are regarded as advocates, and therefore the third surveyor easily assumes a quasi-judicial capacity, which, so far as can be seen, is not the true intention of the Act, of which Judge Cluer's interpretation seems to be unassailable.

* * * *

Although it may at first be rather humiliating to a third surveyor to feel that he is an arbitrator *de facto* but not *de jure*, it is, on the whole, rather a handsome compliment to the profession to assume that he is not an umpire between two disputants, but is merely one of a judicial triumvirate, all equally consumed with zeal for abstract justice, and all immune from bias. It is a view that borders on the sublime, and we are almost inclined to question whether it is not "too good for human nature's daily food." But it is perhaps unfortunate that "this fool of an Act" (to quote a phrase that intrudes itself from Gilbert's "Mikado") says nothing about signatures; and we foresee difficulties, expostulations, delays, dangers even, in collecting the necessary number of autographs to make an award valid in the severe eyes of a county-court judge.

* * * *

Charing Cross Bridge has found a defender: in an engineering periodical—where else could it be expected? There is nothing wrong with the bridge, it seems, except the colour of the paint; and that, we are gravely assured, could easily be altered. Those who complain about the bridge are negligible. "They are all of them people whose mental equipment does not reach a comprehension of such a simple matter as the way to build a Warren girder." It is the dear old dogma that none but a hen is competent to criticise an egg. It is to be gathered, also, by implication, from the same article, that the hideousness of Charing Cross Bridge is to be condoned or justified because the lamp-posts on Waterloo Bridge are placed over the crowns of the arches instead of over the piers; because the London County Council's stoneyard underneath the Charing Cross Bridge should have been moved away so as to leave a clear sweep from Northumberland Avenue; because the sham mediævalism of the stonework of the Tower Bridge is tolerated; and because

the Admiralty Archway has two storeys on one side and two on the other. Excellent points, all; but not new to the architect, except in their application to the defence of Charing Cross Bridge.

* * * *

An inevitable effect of the scarcity of labour is the closer attention that is being given to labour-saving machinery for all industries. This is a matter in which British manufacturers have been hitherto curiously conservative, nor can those connected with the building industry show cause why they should be exempted from the general charge of slowness to adopt new ideas. Of recent years, however, builders have been forced by several causes to overcome their inveterate reluctance to avail themselves of modern inventions; by frequent labour troubles and the shortening of working hours; by the introduction of newer methods of building (such as reinforced-concrete construction), with their appropriate plant and appliances; by the wholesale importation of machine-made joinery, and the necessity of competing with it in speed and price; by the compulsion to keep pace with the general speeding-up of industry; by the rise of large firms of contractors keenly alert to adopt every means of success in competitive tendering and rapidity of construction; and by the tempting offers of foreign firms to supply dumped machinery at low prices with long credit.

* * * *

To-day the need for speed and economy is greater than ever, and is being more keenly realised every hour. Not only is there an unparalleled shortage of labour, but coincident with it there is the prospect of the greatest building boom in history. Presently it will be impossible to run up factories fast enough; and there will be a frantic effort to overtake the tremendous arrears in house-building that are notoriously accumulating to an extent that is simply scandalous. Antiquated plant and machinery will not be equal to the crisis, and will be scrapped wholesale in favour of the latest devices for saving labour and increasing speed. Manufacturers of machinery and appliances that attain these objects will be wise to bring them into prominence without delay, and perhaps to offer certain advantages in the matter of price and credit to purchasers who facilitate business (their own as well as the manufacturers') by booking orders in advance of the rush. Those manufacturers and contractors who prefer the "wait-and-see" policy are likely to pay very dearly for their want of courage and enterprise.

* * * *

Our reference last week to Mr. C. H. B. Quennell's paper on land tenure and town planning has brought from that gentleman a further interesting contribution, which we have much pleasure in printing on a later page of the present issue. It conveys, in characteristically breezy style, a good deal of useful information on a subject about which the general ignorance is well-nigh incredible, and the general apathy simply colossal. Therein lies the chief difficulty of the situation: people will not believe that the remedy is in their own hands, and their legal advisers cannot be expected to encourage a reform that would sweep away so many cobwebs of tradition. No doubt reform would have the immediate effect of injuring the individual legal specialist in land transfer, but, as we have said before, it is quite clear that the profession as a whole would gain greatly by the fifty-fold frequency of operations, and should therefore support reform instead of opposing it; and not only land, but buildings and businesses, will change hands far more frequently, not without bringing grist to the lawyer's mill.

HERE AND THERE.

THOUGH the Summer Time Act has given me an extra hour of daylight for the past week, I find myself, at the last moment, so hard pressed for "copy" for this column that I gratefully accept the gift of three press cuttings from a kindly soul who appreciates the fact that, whatever A, B and C, those text-book diggers and pumpers, can do in an hour, the lot of an architectural scribe in a time of War, with extra pressure of work, is akin to that of Gilbert's policeman. So first I take the slip from the "Evening Standard and St. James's Gazette" directing attention to the new colour scheme which a Department has carried out at the Home Office. "When that hitherto rather sombre-looking edifice now comes into view the first thing that strikes the eye is pink—bright pink! Ninety posters emphasising 'Bad form in dress,' etc., etc., adorn the stonework front, each mounted on a pink paper background, while a wide border of that vivid colour gives a sort of pink dado effect the whole length from Downing Street to King Charles Street." This is brightening up the street with a vengeance. Recruiting by poster was never, to my way of thinking, a happy device, when the early adoption of a general conscription scheme might have saved so much paper and ink, and been so much more satisfactory all round, but as for that "Bad Form in Dress" poster—it is the most unhappy of all, for no woman wittingly ever dressed in bad form, and no woman ever admitted that something new in dress was not absolutely essential: so the woman glances at the poster, and passes by—to Selfridge's!

* * * *

The second cutting is from the "Stoke Newington Recorder," and it tells me that architects and surveyors were numerous in the North London Police Court when structural defects at a house on Clapton Common formed the subject of inquiry by the magistrate, Mr. Hedderwick. The County Council sought to obtain an order for repairs to be made in such a manner as to obviate the alleged danger to a wall, a bay window, and a bulging chimney stack. "In the course of the evidence one member of the architectural profession from the West-End said the fact that a wall had stood out of plumb several inches in a height of six to nine feet for twenty years did not mean that it would not continue in that position with absolute safety for another twenty." The conflict of evidence was great, as might be assumed when expert witnesses were forgotten, and so much time was occupied with the case that the magistrate was reduced to a state of magisterial ennui, and became mildly facetious about leaning chimney stacks. "A master builder, called for the defence, said this was quite safe.—Mr. Hedderwick: Would you like to sleep under the lee of that place on a stormy night? (Laughter.)—I should certainly like to be able to live as long as this chimney stack will stay there, and have plenty of money to spend." (There always appear to be tremendous jokes in the law courts, which, however, fail to raise even the ghost of a smile when you read them in the paper.

* * * *

The third cutting is from the "Sheffield Independent." From this I learn that a North London master builder was called up for service although he had twice had rheumatic fever, and his heart was weak. He was leniently treated as to drill, but within a week fell dead. "The net result is that a man who might have gone on paying wages and taxes, and maintaining his family in decent comfort, is forced into the Army and killed in a week. We have lost a good master builder, and have not even gained a poor soldier."

UBIQUE.

LAND TRANSFER AND THE BUILDING INDUSTRY.

I AM glad to see that you have taken up the question of the improvement of land tenure and its transfer. The action of the Warrington Town Council, which you have previously noted, in inviting the co-operation of other councils in this direction, is again very interesting.

The Warrington authorities are of opinion that land transfer, as it is at present, is a bar to progress in the building of working-class dwellings. One very much hopes that other councils will respond, and if the R.I.B.A. and the builders and estate agents joined issue with them the authorities would have to act.

Just at the moment we hear so much about the necessity of raising foodstuffs at home; of getting back to the land; reclaiming waste spaces, and afforestation, but there is no suggestion that the means by which the land is to be obtained should be simplified. All architects will agree with me that difficulties are generally met with in buying land. If there is anything at all in this talk of back to the land, surely it is a first step to make land easy to acquire. As things are now it is almost impossible to obtain land—we should aim at establishing here the ideal of the French peasant who buys his *lopin* and with it the inspiration of ownership. It will be a rank scandal if after the war there is emigration like that which followed the South African campaign. In much the same way owners, architects, and builders will be severely handicapped in the rebuilding which must follow the war, if we are to maintain our position in the economic struggle. Without some improvement in land transfer we cannot expect much improvement in the town planning way, and the hope is that there will be a general appreciation of the fact that ugliness does not of necessity make for efficiency.

Nineteenth Century industrialism, judged by the average manufacturing town, must have been beastly at the core. The gin palace and the slum went so well with it. If this is to be altered and we are to have canteens for workers, and some little recognition of the amenities, then all hindrances should be swept away.

Your reference to the House of Lords Debate on the presentation of the report of Royal Commission on Land Transfer is useful, in showing that not only laymen, but distinguished lawyers, criticised our present system as "unique for its futility and costliness."

When one thinks that with copyhold land we still have the custom of Gavelkind in Kent, under which property is divided equally; of Borough-English in other parts, where it descends exclusively to the youngest son, while in Common Law it goes to the oldest; with copyhold, too, there may be a heriot or succession; all of which would be very interesting if the country was being run as a gallery of antiques, but is a distinct nuisance in doing work.

I see you note some of the criticisms which were made on my paper read at the Town Planning Congress, when I spoke in favour of land legislation. As you rightly say, such arise generally from ignorance. Last year I sold a property in Kent for £2,325, and the inclusive legal fees to the vendor, for preparing the contract in effecting the transfer of the land, which was registered with an absolute title, amounted to £6 6s. 6d. There was no more trouble about the transaction than in transferring a block of shares. Had the land been held under the private deed system, the proper scale charge would have been £28, but I do not attach so much importance to the pounds saved as to the absence of fuss and mystery.

It is, of course, open to the Warrington people to



Photo: Bedford Lemere & Co.

CURRENT ARCHITECTURE (SERIES III.). XXXV.—MOORGATE HALL, FINSBURY PAVEMENT, LONDON, E.C.

RICHARDSON AND GILL, F.F.R.I.B.A., ARCHITECTS.

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Photo: Bedford Lemere & Co.

CURRENT ARCHITECTURE (SERIES III.). XXXVI.—MOORGATE HALL, FINSBURY PAVEMENT, LONDON, E.C.: MAIN ENTRANCE.
RICHARDSON AND GILL, FF.R.I.B.A., ARCHITECTS.

EDWARD
OF THE
UNIVERSITY OF ALABAMA



SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.). XXXVI.—PORCH, BLACKHEATH HILL, LONDON, S.E.

LIBRARY
OF THE
UNIVERSITY OF ALBANY



ENGLISH INTERIORS. VI.—THE DINING-ROOM AT HOLME LACY, HEREFORDSHIRE.

LIBRARY
OF THE
UNIVERSITY OF BLIND

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS



LIBRARY
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UNIVERSITY OF ALABAMA

adopt land registration. Any county borough may petition the Privy Council for compulsory registration within their own area, and set up a register under the control of the Central Land Registry. That is, of course, if a majority of the citizens so desire, or they could set up a voluntary register, but what we want is uniformity and improvement all round.

Good luck to your enterprise, and why not take up light and air as well? Here again we want uniformity with the Building Act and an absolute rule, so that we may be in a position to advise clients that on such a site you can provide so much floor area, and show a certain definite return. The law as at present is more designed to aid the sustenance of the expert witnesses than to help forward the building trade and the part it should play in the healthy development of our country. A simplification of land transfer would kill the land crank.

C. H. B. QUENNELL.

THE PLATES.

Moorgate Hall, Finsbury Pavement, London, E.C.

WHILE it is true that the City possesses a large number of business buildings of the day before yesterday which are remarkably good for their period—in a Victorian manner of the Italian Renaissance—too often the modern buildings are lacking in architectural quality, and the initial deficiencies in their design are not compensated by a lavish use of the best materials. It is therefore with the greater pleasure that we see such a new building as Moorgate Hall, Finsbury Pavement, a building bearing on the face of it the hall-mark of scholarly ability in architectural design, while at the same time frankly recognising the most modern methods of construction and utilising them to provide office premises which are suitably arranged and admirably lighted in every part. The building is of steel-frame construction with concrete floors on the patent system of The Fawcett Construction Co. The façade is of Portland stone, and extends for a length of 220 ft., being one of the longest single fronts in the City. In the centre is the main entrance, marked by a noble doorway, the architrave of which is enriched with some carved floral ornament, exhibiting a conventional treatment of oak leaves, while the opening is filled by a pair of wrought-iron gates. The building has a flat roof, and its treatment with the attic set back and the central part, comprising five bays, carried up above the main roof

line (and incidentally screening water tanks at this level), gives to the building an ordered skyline which is as pleasing as it is rare. The lettering on the fascia seems unnecessarily large; but this is a matter for which the architects are presumably not primarily responsible, the size and style in such cases being commonly prescriptive. A plan of the building is reproduced below. Messrs. Richardson and Gill, F.F.R.I.B.A., were the architects, and Messrs. Chessum and Sons the general contractors.

Porch, Blackheath Hill, S.E.

This has all the charm of eighteenth-century work, inasmuch as its general design is quiet and well proportioned, while the details, the mouldings, and enrichments, are refined in character.

Dining-Room at Holme Lacy.

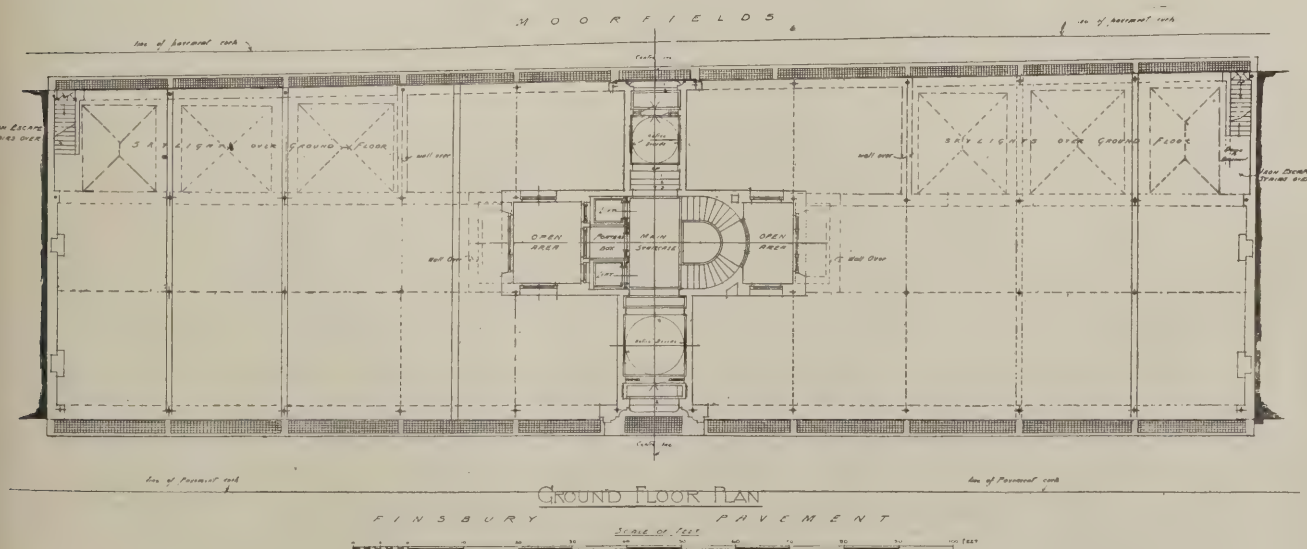
Holme Lacy is one of the "homes" of England, a Herefordshire mansion of late seventeenth-century date displaying within its rooms the rich decoration and furniture which characterised the period.

Doorway to Administrative Building at Cleveland.

We take this plate from our contemporary "Architecture" (New York). The work shows a very interesting modern American rendering of the Wren manner, carried out in terra-cotta, a material that finds ever-increasing favour with American architects, who, moreover, know how to use it with æsthetic effect.

TO ARCHITECTS ON SERVICE ABROAD.

UNDER this heading we published, on p. 157 of our issue for April 12, a note to the effect that Mr. Percy S. Worthington, F.R.I.B.A., Lombard Chambers, 46, Brown Street, Manchester, would be glad to hear from any architects on active service who have made sketches and notes of interest "in the countries where they are serving," and would be willing to lend them to show at an exhibition of drawings of Belgian subjects proposed to be held at the City Art Gallery, Manchester. Mr. Worthington now wishes to make it clear that French drawings are outside the scope of the exhibition. The drawings he requires must be from Belgium, as they are intended to supplement an exhibition of pre-war Belgian sketches. He trusts that this notification will save correspondents the trouble of sending French sketches, which are unsuited to the purpose in view.



MOORGATE HALL, FINSBURY PAVEMENT, LONDON, E.C. RICHARDSON AND GILL, F.F.R.I.B.A., ARCHITECTS.

THE REBUILDING OF DUBLIN.

In an article on the rebuilding of Dublin the special correspondent of the "Daily Mail" in Dublin writes:

I went to ask the Lord Mayor of Dublin whether this unique opportunity for rebuilding the heart of Dublin on better lines is to be ignored. The impression I formed of his lordship was that if keenness and energy can effect it the new Sackville Street to arise out of the ashes of the old one will be a street to vie with any in this kingdom or others. He was wonderfully enthusiastic, and as we sat there talking he ticked off for me little ideas of his own about the future Sackville Street that showed a fine conception of its possibilities. "It might be a second Rue de Rivoli," he concluded, and Sir John Irwin, a leading citizen of Dublin, who was with him, nodded approval. One suggestion of the Lord Mayor's that struck me as very right was in regard to the space about the Nelson Column. The column stands plumb in the centre of Sackville Street, near the Post Office, at a point where two main cross streets meet. Both of these are narrow. The tramway cars have to squirm and twist to round the column; foot passengers dodge across when and how they may. "Why not a circus round this column?" said the Lord Mayor, "on the lines of, say, your Piccadilly Circus in London? This point is the hub of our city. To rebuild it as it is now would be a woeful waste of opportunity and short-sighted beyond words. The buildings could be set back at the two cross streets, and their frontages rounded to make an ample circle with the column as the centre."

"Of course," the Lord Mayor added, "these are only ideas that have been talked of. Architects must decide the lines on which Sackville Street will be rebuilt. The point concerning us now is rather one of ways and means for the rebuilding, and this point is causing us deep consideration, for we shall need not only money, but important municipal powers. As yet we cannot control in any effectual way the rebuilding of this part of the city. Our powers are utterly inadequate."

He went on to explain to me that Mr. Asquith had given the corporation a sympathetic answer to their request for Government help, and had told them to frame their suggestions. A Bill, therefore, is being drawn up. It embodies, briefly, these powers:

1. To acquire and readjust street frontages immediately.
2. To acquire ground rents and other interests of destroyed property and surrounding property.
3. Power to borrow and lend money for the reconstruction of premises.
4. Power to control the purposes and design of all new property.

These would perhaps seem big powers to put in the hands of a municipal corporation spending Government money, but that is not the idea; it is proposed that a joint Municipal and Government Board should be established to control the rebuilding and the spending of funds, and that on this Board the Government's nominees should be in a majority. Thus national interests, as opposed to Dublin municipal interests, would be safeguarded. This Board, it is asked, should have the powers enumerated above.

"One of the Competitors in the Plan for the New Dublin" has the following letter in "The Times" of May 23:

"Sir,—I write in support of Mr. Maw-

son's excellent suggestion in your columns of May 20 that the competitors in the Dublin town plan should now have their work adjudged. As one of these competitors, I rather resent having the labour, report, and drawings of many months' hard work indefinitely stowed away. . . . Cannot some appeal be made to the Marquis of Aberdeen? There was some excuse for postponement when the war broke out. There was less six months later, when an indefinite postponement was announced. There seems to be none now that Dublin is crying to be rebuilt. The excellent suggestion has been made that the eight architects—they are partly English, partly Irish—who sent in final drawings and reports should be invited to meet together, that Lord Aberdeen's prize should be divided between them equally as a retainer for their services, and that their reports and drawings should be made public, and, if possible, issued in a form that may be of service for the building of the new Dublin. I believe all the competitors would agree to this; if Lord Aberdeen is agreeable, why can it not be done, and done now that the need is there? Further, is it too much to ask the Government to make some contribution towards the publication of such a report? After all, here is the work of experts, men who presumably know their business, and have some contribution to make that may be of value at a time of crisis. Why can they not be listened to?"

[This appeal being opportune and reasonable, we trust that it may have the desired effect. See also our Editorial columns.—Eds. A. and B. J.]

PROGRESS AT NEW DELHI.

The construction of New Delhi is making satisfactory progress, having regard to the curtailment of the Budget allotment, in consequence of the war, to £333,000 last year and to the same figure for 1916-17.

Much of last year's grant (writes a "Times" contributor) was expended on the many preliminaries required for transforming the rough site into a fine city by levelling, making roads, digging foundations, collecting material, and manufacturing bricks.

The Indian clerks' quarters and the menials' quarters have been completed, and bungalows have been provided for the occupation of the works staff. Experimental bungalows for the higher officials, to be built in the neighbourhood of Government House, are being put in hand, and are expected to be ready for occupation early in 1918.

Meanwhile the central point of interest in the plan has been given careful detailed consideration by the Government and the architects. The foundations of Government House and the large blocks of Secretariats by which it will be flanked have been laid and the basement walls are going up. An indication of the progress at the Governmental centre on Raisina Hill is to be seen in the Royal Academy, where the statues of their Majesties in Coronation robes, which are to be placed in front of Government House, are exhibited. That of the King, by Mr. Mackennal, is the gift of the Maharaja Sindhia of Gwalior, and that of the Queen, by Sir George Frampton, is the gift of the Maharaja of Bikanir. The keen interest of the ruling princes in the transfer of the capital, which is very welcome to them, is further shown in the gift by the Maharaja of Jaipur of the commemorative column in the central avenue. The column, surmounted by the Star of

India, will be well seen from the "Great Place" leading to the central avenue.

Suggestions have been made for completing this avenue, sited upon Indrapat by a stately colonnade, entered by three large gateways, to commemorate the Indian heroes of the war. The separate bays would be utilised for distinct memorials, regimental or communal, so that Hindu and Mohammedan, Sikh and Gurkha, Jat and Mahratta would have their respective niches. Nothing could be more appropriate as an extension of the main features of New Delhi, which has been decided upon before the war came to strengthen the imperishable links of Empire between Great Britain and India.

PROTECTION OF GLASS IN WAR TIME.

Mr. F. Sydney Eden, of Walthamstow makes the following suggestions with respect to the protection of valuable glass in war-time:

1. As old leadwork offers less resistance to explosive force than modern leads, the liability of ancient glass to irretrievable damage by bombs or gunfire is less where it is in its original lead binding than where it has been releaded in modern times. An explosion may drive ancient glass from its original leads, but there is a strong probability that much of it will escape fracture and so be available for restoration. Therefore, leave undisturbed until after the war all old glass which may be in original leadwork, however bad its condition may be.

2. Protective external boarding should be placed some feet away from the glass and be backed with sandbags.

3. Existing external lights of modern white glass—especially thick plate—put up to protect old glass should at once be removed, and if protection against everyday risks is necessary wire netting substituted for them. These external lights, as recent events have shown, are an additional danger to old glass exposed to the effects of an explosion.

4. If the plan favoured by some—removal of old glass until after the war—be adopted, a coloured tracing of every panel removed should be made prior to its removal, so that there may be no difficulty in correctly replacing pieces of glass which may fall from their settings in the course of removal. Neglect of this precaution is a fruitful source of misplacement of old painted glass. Many instances occur to me, some ludicrous and others serious misrepresentations of history, but considerations of space forbid pursuit of the subject.

5. When old glass is damaged by explosion the débris should be left where it falls. If this be done an expert hand will have a chance of effecting an intelligent restoration, but if the fragments are swept together in heaps and people are allowed to carry away pieces as mementoes—as happened not very long ago in a case known to me—all possibility of doing so is barred.

6. When peace comes all ancient glass removed in war time should be restored to its place with scrupulous accuracy. This suggestion may perhaps be thought superfluous, but the modern history of old painted glass proves the contrary. The curio dealer is always ready to buy ancient glass for exportation to the United States, and legal custodians of the fine old stuff are at times beguiled by the fascinating cry of new lamps for old ones.

Mr. Thackeray Turner, chairman of committee of the Society for the Protection

of Ancient Buildings, 20, Buckingham Street, Adelphi, W.C., writes:

This society has received so many inquiries as to how ancient stained glass should be protected from the risk of bombs dropped by aircraft that it hopes you will be willing to allow it to state briefly its views.

From the direct action of splinters it is thought that the only protection is to remove the glass and put it in a vault. But there is no doubt that windows run a risk of destruction from air pressure due to explosion at a distance, and it is thought that a screen of three-quarters of an inch of rough boarding standing in front of the window would in many cases save the glass. Where there are buttresses on either side of a window, the boarding might be fixed on the face of them. In other cases, where the windows light the ground floor, the screen might be fixed to scaffold poles, and, of course, if the expense of two thicknesses of boarding with an air space between them were allowed, the protection would be still greater. In many cases the glass may be sufficiently far back from the face of the wall to be protected by fixing wood uprights against the wall on either side to carry the boarding. It is thought that covering the windows over in this way would be a cheap method of providing a reasonable protection against air pressure, but it certainly would not be a complete protection.

FORESTRY AND TIMBER SUPPLY.

It is necessary (writes Mr. John Ford, of Exeter) that Great Britain should raise a much larger amount of timber, and he supports this contention with quotations from a circular issued by Mr. Cleveland in connection with the United States Forest Service, 1908—almost exactly eight years ago.

"The nations which follow forestry most widely and systematically are the most enlightened and progressive, and a country without forestry may be set down as a backward one. The exception is England (i.e., Great Britain), which, though provided with mountain and heath land capable of producing a large part of the wood required for home consumption, has, with strange indifference, depended mainly upon foreign sources for her supplies."

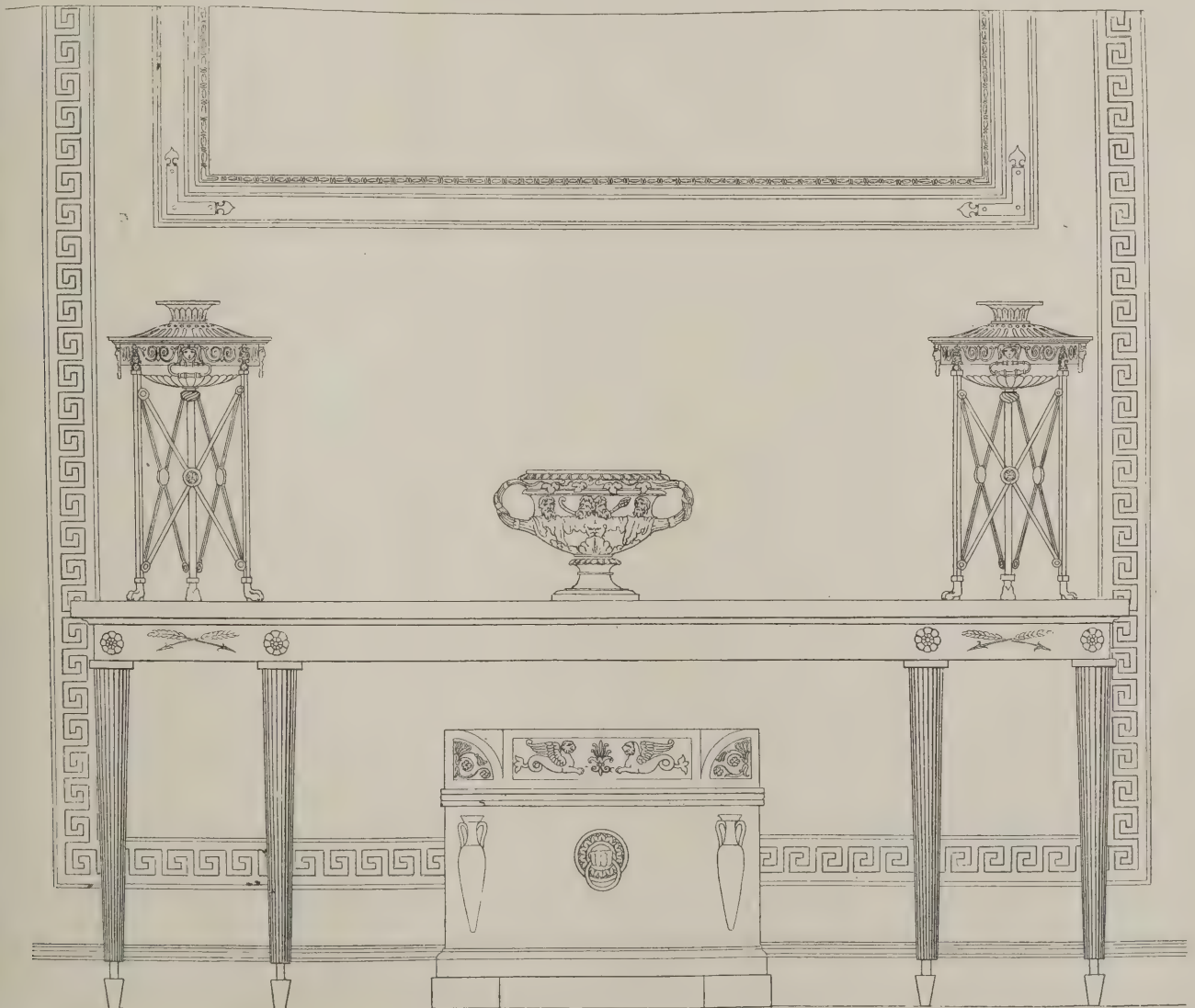
In 1908 it was apparent, says Mr. Ford, that although for many years Great Britain had been able to obtain large supplies of timber from Russia, the Scandinavian countries, and Canada, those supplies, as well as what was obtained from the United States, must in time decrease, and that unless steps were at once taken for the production of home-grown timber great difficulty would be experienced in finding the timber absolutely necessary to British industries—including house-building and other constructional work. About eight years ago the writer drew the attention of

large landowners to the necessity for systematic forestry in Great Britain. Official inquiries were then set on foot, and it was found that in certain parts of Scotland the returns from woodlands were extremely good even at the comparatively low prices then obtainable. It follows that as foreign supplies decrease the value of home-grown timber must be enhanced, consequently that the returns from well-managed woodlands must improve as time goes on.

Prince Bismarck and other estate owners in Germany long ago secured an increased output of timber, with a proportionate increase in revenue—the timber supplied for railway sleepers and telegraph posts alone brought a large income to the Bismarck estate. Properly treated, timber is a profitable crop where other crops would be almost impossible of growth.

THOMAS HOPE AND HIS TIMES.

Thomas Hope, who flourished in the late-eighteenth and early nineteenth centuries, was really responsible for the English Empire style in its fullest phase. Following the fashion of the day, he collected antiques, which were housed in his London residence in Duchess Street, Cavendish Square, and afterwards in the Classic villa which he built as a country seat at Deepdene, near Dorking. Hope's taste for furniture was remarkable. As may be seen by his executed work and by his book-



DESIGN FOR A SIDEBOARD BY THOMAS HOPE. 1807.

on "Household Furniture and Interior Decoration," 1807 (from which the illustration on p. 231 is taken), he attempted to raise furniture design from the rank of a second-rate art practised by tradesmen to the level of a living and first-rate art, allied to architecture, and in this endeavour he was remarkably successful.

LEGAL.

Builders' Claim for £97,000: The New Local Government Board Offices.

Spencer Santo and Co., Ltd., v. The Commissioners of H.M. Works and Public Buildings.

May 18-23. Official Referee's Court. Before Mr. Pollock.

This action, which was a claim against the Office of Works for £97,000, balance of contract price for building the new Local Government Office at Westminster, was continued (see our issues of May 17 and 24).

Mr. P. H. Patten was recalled and cross-examined by Sir Reginald Acland, K.C., at great length, upon the numerous details of the building, especially in regard to the alleged alteration in the plans, some of which he admitted came within the terms of the contract. He admitted also that the terms of the contract gave the architect for the Office of Works power to vary the plans or to give part of the work to other contractors if he thought fit. As to the brickwork, he said that the omissions increased the cost of labour in proportion, and reduced the profit accordingly. If the estimator had known that certain concrete work was going to be omitted, he would not have put a different figure down. By taking away the concrete work, the unit of value had been disturbed, and he maintained that the contractor was entitled to the whole amount for which he had contracted. The omission in the concrete work amounted to 175 yards out of a total of 13,000 yards.

Sir R. Acland: If the estimator had known that the omission was going to be made, would he have put a different price on it?

Witness: I do not say that he would have done so; but it disturbed the whole thing.

In further cross-examination, the witness said that the contractor had been put to greater expense in consequence of the alterations and omissions.

Mr. Patten, during his cross-examination on Tuesday, after having been eight and a half days in the box, was unable, owing to the constant strain to which he had been subjected, to continue his evidence, and it was arranged that his further examination should be postponed, and other evidence interposed.

Mr. F. Durrant, the managing director of the plaintiff company, was accordingly called and examined by Mr. Compston, K.C., as to the various payments made during the progress of the work upon the architect's certificates and the value of the work remaining to be done at various periods when such payments were made.

The further hearing was adjourned until Monday.

Third Surveyors and Awards.

May 18. Shoreditch County Court. Before Judge Cluer.

A decision which was stated to be of the greatest importance to surveyors, was given by his Honour Judge Cluer, in the Shoreditch County Court, on May 18. The plaintiff was David Morris, of 98,

Darenth Road, Stamford Hill, a builder, and he asked that an award that had been signed by a surveyor, under the London Building Act, should be set aside, the respondents being Messrs. Clozenberg and Hopkins, Ltd., of 36, Charing Cross Road, W.C., picture palace proprietors. Mr. H. J. Turrell appeared as counsel for the plaintiff, and Mr. Lincoln Reed, barrister, for the defence. The ground for asking for the award to be set aside was that it was signed by one surveyor only, and not by a surveyor appointed by either the appellant or the respondent, or by three or two surveyors, as required by Section 91 of the London Building Act. It appeared that the appellant was the owner of some building land adjoining the respondents' picture palace. Appellant was preparing to build six lock-up shops, and Mr. Pratt, surveyor to appellant, prepared a party structure notice. Respondents engaged a surveyor. When building operations were started another wall was discovered, so that it could be said there were two party walls, but really they were externals. A third surveyor was appointed as required by the Act. Then the matter found its way to the Chancery Court, and it was agreed that there should be no interference with walls D, E, and G," but no mention was made of "C, D." Then a reference was made to the third, and on April 10 he published an award, which he alone signed, which, counsel contended, was not one contemplated by the Act, it not being within the province of surveyors to publish such an award. He referred to "C, D" as a party wall, but, counsel contended, he had no jurisdiction as to it, as it was not included in the party wall notice. His Honour would know that an award had to be appealed against within fourteen days or it became conclusive. Then as to the award, there was a technical point of the greatest importance to surveyors, and that was that these references to surveyors under the L. B. A. were as arbitrators and not as umpires. If there was only one surveyor of course he could decide, but if each side had one and they appointed a third in accordance with the Act, then the award had to be signed by a majority of two if not the whole three to be valid.

Mr. Reed said he could not agree with the point; the language in the Statute was directory and not imperative, and therefore the fact that the award was only signed by one did not vitiate it. He was informed that it was the universal custom amongst surveyors to appoint a third, who signed the award solus. It was a practice that had steadily grown up and was always acted upon. If his Honour looked at the matter with technical eyes, he felt sure he would see there had been sufficient compliance with the Act. The Legislature surely meant that disputes were to be referred to a third surveyor.

Judge Cluer said if it was going to be suggested that a third was to be appointed who could issue a solus report, it was in direct contradiction to the idea of appointing a second and a third. Anyway, the first point was fatal. The third surveyor had taken the position of umpire, which was wrong, and the award must be set aside. If it was the practice amongst surveyors for the third to issue solus awards, then the sooner the practice was altered the better, as it was illegal.

Mr. Turrell asked as to the £10 10s. that had been paid for the award, and his Honour said they would have to sue for that; he had no power over it.

The appeal was then allowed, with costs.

BOOK NOTICES.

Elementary Manual on Strength of Materials.

Mr. Ewart S. Andrews has done well to prepare an abridgment of his work on "The Strength of Materials." A large book, at a commensurate price, is in both respects rather appalling to a beginner, who in too many instances must needs do without it unless he can see it in a free library. At the present moment, when it is of supreme national importance that every possible facility for the acquisition of useful scientific knowledge should be rendered available to the youths who are to carry on, in a less casual and haphazard manner than sufficed for their fathers, the industries of the Empire, it is essential to place in their hands technical books in which basic principles and approved theories are soundly and clearly explained. Text-books, like all other good things, are, of course, liable to abuse. Instead of helping the student, they may delude him into a foolish belief that book-knowledge, and not its practical application in the workshop rather than in the examination-room, is the final goal, and some text-books are so prepared as to foster this fallacy. Those who are acquainted with Mr. Ewart Andrews's many and valuable contributions to technical literature will not need the assurance that the manual under notice is in the highest sense serviceable to the student who means business. In the preface it is stated that the author has attempted to present the subject in sufficiently practical form to be of greater assistance in practical design than a book prepared solely for class purposes, and this object has been fully attained, the worked examples with which every rule and theory is illustrated referring invariably to cases that occur more or less commonly in practice, while the author sedulously avoids the mistake of assuming that the student has undergone a severe course of training in the higher mathematics. On the other hand, he recognises that a certain degree of mathematical skill is necessary to an intelligent understanding of the problems involved, and he has taken the rational course of meeting the student on easily accessible ground. All to whom a working knowledge of the behaviour of materials under constructional or loading stress is essential will be grateful for this very clearly expressed, well illustrated, and altogether useful and helpful manual.

"Elementary Strength of Materials." By Ewart S. Andrews, B.Sc. Eng. (Lond.) With numerous illustrations, Tables, and Worked Examples. Pages viii + 216, price 4s. 6d. net. London: Chapman and Hall, Ltd.

Thermodynamics.

As Mr. Louis A. Martin, jun., observes, thermodynamics "is a most fundamental science"; it deals with the relation between heat and other forms of energy, and therefore should be studied by those who desire to become acquainted with the basic principles underlying, for instance, the practical applications of the various forms of energy—kinetic, potential, heat, radiant, electric, magnetic, or chemical. In Mr. Martin's book these principles are very clearly explained. Under "Gases," he cites the laws of Joule, Boyle, Charles, Avogadro, and Dalton, and shows their developments and applications, and under "Vapors" he indicates the conditions which govern engine efficiencies, flow of fluids, pressure on cylinders, and other manifestations of energy which, as a rule, the practical man is content to understand superficially, but which he may here study *au fond* to his interest and profit, the

author laying special emphasis on the technical or engineering applications of the mechanics of gas and vapours.

We notice, with interest not untinged with amusement, that the author has some slight leaning towards spelling reform. "Vapor" was to be expected (we mean the spelling) from an American, but "enuf" and "thru" are not yet common in scientific writing. Most phonetic renderings look ludicrously uncouth, but perhaps this appearance will wear off with usage.

"Text-book of Mechanics." By Louis A. Martin, Jr., Professor of Mechanics, Stevens Institute of Technology. Vol. VI.—Thermodynamics. Pages xviii. + 314, price 7s. 6d. net. New York: John Wiley and Sons, Inc.; London: Chapman & Hall, Ltd.

OBITUARY.

Mr. Robert Alexander Briggs, F.R.I.B.A.

Mr. R. A. Briggs, F.R.I.B.A., who died in London on May 10, was, writes Mr. A. N. Prentice in the Institute "Journal," a man of marked personality, rapid in thought and quick of action. His keen sense of wit, combined with a genial disposition, never failed to make an impression on all who came in contact with him. He was an extremely well-read man, a brilliant conversationalist, a talented musician and composer of songs. He was never happier than when he had a few friends gathered round him for a musical evening. On these occasions he was a willing accompanist on the piano, but he always maintained that his favourite instrument was the organ, and he used to speak of the old days when he conducted the service in the school chapel at Sherborne. As well as being musically inclined, Briggs, when opportunity occurred, was fond of shooting and fishing. His keen personal interest in everything he undertook is exemplified by his useful invention of the "Fly and Cast Box" well known to sportsmen. He started practice as an architect in 1884, and was a splendid draughtsman and colourist, besides being endowed with exceedingly good business qualities. His practical mind concentrated on improving the designs and plans of small country residences at a time when this class of building was almost entirely the production of the local builder. Within seven years of starting his practice he had produced quite a large number of bungalows and small houses, built chiefly on country estates, such as Bellaggio, in Surrey. He published his bungalow designs in book form, and thus supplied a want which he then maintained had not hitherto been filled by previous works on the same lines. The first edition of "Bungalows and Country Residences" came out in 1891 and, since that date, under various titles, this little book has extended into no fewer than five editions. Briggs's literary and artistic attainments led him to write numerous articles on architecture and decoration. An article on "Designs for Pianoforte Cases," published in "Furniture and Decoration," resulted in cases being greatly improved. Lastly, in 1911, Mr. B. T. Batsford brought out his delightful work on "Pompeian Decoration."

That the bungalow period was only a stepping-stone to his career is proved by the many large works which he afterwards carried out during a busy practice which extended until quite recently. His most important domestic works were the rebuilding of Cowley Manor, Gloucestershire, and Battenhall Mount, for the Hon. A. Percy Allsopp. Briggs also was a

church architect, and few people are aware that the beautiful stone-screen, altar and reredos in the Jesus Chapel, Worcester Cathedral, were erected from his designs and carried out under his own personal supervision. He was never very successful in competitions, although he was ambitious enough to submit a fine Gothic design for the Liverpool Cathedral. In the affairs of the R.I.B.A. he did not take a very active part, but he frequently attended the meetings. He also acted as a member of the Board of Examiners for several years, under the chairmanship of the late Mr. Arthur Cates.

Mr. Robert Alexander Briggs was articled at the age of eighteen to Mr. G. R. Redgrave (son of Richard Redgrave, R.A.), of Broadway Chambers, Westminster, for three years. He attended lectures at the Royal Academy, and the classes and lectures at the Architectural Association. From 1879-83 he was assistant in the offices successively of Mr. G. Moreing, Messrs. Isaacs and Florence, Mr. E. C. Lee, and Mr. J. J. O'Callaghan (Dublin). In 1883 he was awarded the Soane Medallion and £50 for a design for an Academy of Music. He started practice in 1884 at 36, Chelsea Gardens. Among his works were the following:—House for Sir John Hall Rusholme, New Zealand; church at Macclesfield (in conjunction with Mr. Kilbrite); four bungalow houses at Bellaggio, Surrey; houses at Sutton, Northwood, Wembley, Pinner, North End, Hampstead, D'Abernon Common, Burgh Heath, Kingswood, Maidenhead, Stanmore, Lee, etc.; alterations at Queen's Gate Hall, S.W., 8, Seville Street, etc. He was the architect of the private chapel, Worcester, for the Hon. P. C. Allsopp; the memorial at Evesham to Simon de Montfort; mansion at Farnborough for Hon. J. Scott Napier, Cowley Manor House, Gloucestershire, etc. He was elected Associate of the Institute in 1882 and Fellow in 1892. Mr. Briggs was instrumental in securing for the Institute the valuable and interesting collection of drawings and designs by James Burges, A.R.A., some of which were exhibited in the Common Room a few weeks ago and described by Mr. Briggs in an article entitled "The Art of James Burges, A.R.A." in the "Journal R.I.B.A.," February 19, 1916.

Mr. Edward Arthur Heffer.

Mr. Edward Arthur Heffer, who died on April 3, at Norwich, was born in London on May 5, 1836. He was the son of Edward Heffer, a picture dealer and gilder, who was well known amongst artists. After a private education E. A. Heffer entered the Government Head School of Design at Somerset House when he was fourteen, and studied there under Mr. Richard Burchett, the visiting masters being J. R. Herbert, R.A., and Richard Redgrave, R.A. He remained there two years, and was awarded in 1852 the national medal for linear perspective, the only one awarded in the United Kingdom; also he took the first prize for chalk drawing, and for practical geometry. After spending some months in sketching from nature in the neighbourhood of Hampstead, he was introduced by John Wykeham Archer, F.S.A., and George Lance, the eminent still-life painter, to John Thomas, the sculptor of the New Palace, Westminster, and architect of Somerleyton Hall, Suffolk; Preston Hall, Aylesford, Kent; and numerous other buildings. Although Mr. Heffer at first worked at modelling and carving, he afterwards helped Mr. Thomas with his architectural work, in which he felt he

would better succeed, as he had a strong feeling for the art of the architect. After being with Mr. Thomas for four years he went, at the age of twenty-one, to Liverpool, where he began practice as an architect and designer of ornamental and decorative work. He designed the National School and Public Offices at Wavertree, a school at Walton-on-the-Hill, a warehouse in South Castle Street, Liverpool, the Mayer Lecture Hall and Art Gallery, and the Free Library at Bebington, Cheshire, and Pennant House at Bebington, and various residences in the neighbourhood of Liverpool. His chief work, however, which occupied four years, was the church of St. Bridget at Wavertree, on which he bestowed much care. In plan, the church is somewhat similar to the church of St. Agnes in Rome, but the details are of a carefully studied Greek character. The exterior is of grey brick with bands of red and black bricks, and there is a tall campanile. Mr. Heffer prepared designs for the furniture of the church, and the twenty-one large windows of the clerestory are filled with coloured glass prepared from his own drawings. The carving of the altar, made of various woods to his design, is also from full-size drawings. Returning to London in 1875 he carried out various works at Hampstead and Kilburn. In 1875 he made a design for a cathedral to be built on the site of St. Peter's Church, Liverpool, and read a paper on the subject before the Historic Society of Liverpool. When, after some years, the competition was organised, he submitted a design for the cathedral on St. James's Mount, and made a model of it, which was exhibited at the Walker Art Gallery at Liverpool, and much admired. In 1892 he removed to Norwich, and carried out several hotels and other works. It was his habit to do with his own hand all the necessary detail drawings; he found time, however, to enter over seventy competitions, in which he gained several premiums. He gained the premium offered for a design for the Albert Memorial Clock Tower at Hastings, and was entrusted with the work of building it. He also obtained the premium of 100 guineas for his design for the improvement of the White Rock Parade at Hastings, and 50 guineas for his design for the Town Hall. In Hastings, too, he built Tudor House for the late Alderman Ross. At the age of nineteen he exhibited at the Royal Academy, the work being a design for a bishop's tomb, and again in subsequent years his work was to be found there. He found recreation in painting (landscape and figure subjects, at first in water-colour, and latterly in oils), and in music, of which he was an able executant and occasionally a composer. He designed domestic and church furniture, plate, clocks, and many other objects incidental to his profession.

Mr. Thomas Jones.

The death has taken place at Southport of Mr. Thomas Jones, a member of the Southport Town Council from 1894 to 1906, in which year he retired. Mr. Jones was sixty-one years of age, and formerly carried on business as a brick and tile merchant near Crofton.

Mr. Thomas W. Binnian.

Mr. Thomas W. Binnian, whose family have for four generations been builders in Kidderminster, has died in his seventy-seventh year. The firm were at one time principally engaged in the work of church restoration, and in one instance they worked under the direction of John Ruskin.

NEWS ITEMS.

Prevention of Flooding.

In underground structures the most troublesome work a contractor has to overcome is the prevention of flooding. A grit chamber at Huntingdon, through which water was continually percolating, has been made perfectly watertight. We learn that the result was achieved by the use of Pudloed cement concrete.

"Reinforced Concrete Roads."

Under this heading, on p. 223 of last week's issue, it should have been made clear that the article by Mr. W. Matthews Jones, city engineer, Chester, was not merely "quoted" in "Road Reinforcement" (an admirably produced publication issued by the British Reinforced Concrete Co., Ltd., 1, Dickinson Street, Manchester, and 20, Victoria Street, Westminster), but was, as a matter of fact, written specially and exclusively for that excellent organ.

Three Hundred Houses for Owston.

At the Doncaster Rural District Council the Clerk reported an interview with Sir Tudor Walters respecting the proposal of the Bulcroft Main Colliery Company to erect 300 houses in the parish of Owston. It was resolved that provision be made for including the plan in the Town Planning scheme, and that the clerk be authorised to enter into negotiations with the Urban District Council of Adwick-le-Street for the disposal of the sewage from the new houses.

Builders' Wages in Hull.

The Hull building trade operatives made an application to the Master Builders' Association recently for an advance of wages. The master builders were unable to grant the same. A deadlock ensued, and the matter was referred to the Northern Centre Board of Conciliation. The decision of the Board was that the wages of bricklayers, joiners, plasterers, masons, labourers, and slaters be advanced $\frac{1}{2}$ d. per hour as from Monday, May 15, and a further advance of $\frac{1}{4}$ d. an hour be conceded on October 30 next.

The Restoration of St. Bartholomew's, West Smithfield.

For the present the work of restoration of the Norman Priory Church of St. Bartholomew-the-Great in the City has been completed, but the schools, which succeeded those held in the church before the suppression of the monastery in 1539, and were rebuilt as recently as 1888, will have to be closed unless a sum of £1,865 is forthcoming. This amount is needed to carry out the alterations and to provide the playground required by the Board of Education. A fund is now being raised by the vicar and churchwardens to secure the sum required. The carrying out of the plans has been postponed while the war lasts.

Lille Hôtel de Ville.

The Hôtel de Ville, at Lille, which the Germans report has been destroyed by fire, was almost rebuilt in 1846, but retained fragments of the previous fifteenth-century edifice. At the north-west angle still existed a Gothic chapel and turrets in brickwork remaining from the ancient palace of the Dukes of Burgundy, built by Jean-sans-Peur, and inhabited by the Emperor Charles V. This older portion included the Council Chamber, which was decorated with

paintings by Arnold de Vaux (1726). The uppermost floor of the Hôtel de Ville was arranged as a museum and art gallery. Probably the valuable paintings, like the books in the famous library, were rescued by German soldiers, and forwarded to Berlin.

Leipzig's New Railway Terminus.

The United States Consul at Leipzig has sent the following particulars of the new terminus in that city: The main building has a front of 984.25 ft., and each of the side wings measures 295 ft. The area covered by this main building is 167,918 sq. ft. The passenger platforms behind the main building are covered by an iron roofing of a length of 784.4 ft. and of a surface of 710,424 sq. ft. Of this roof surface 301,392 sq. ft. are built as skylights. Above the passenger platforms are erected, side by side, six trainways of a length of 787.4 ft. each. As a connection between the main building and the passenger platforms, a cross hall has been built along the rear front, having a breadth of 114 ft. The total cost of the construction of the station was \$32,130,000—say, £6,425,000.

Architects Enlisting.

The arrangements made by the Royal Institute of British Architects with the Queen's Westminster Rifles for the enlistment of members desiring to serve together have unfortunately had to be cancelled, as the War Office has found it necessary to stop further recruiting for this regiment. Fresh arrangements have now been made with two other battalions, in which members of the Royal Institute and other architects will be welcomed if they will come forward without loss of time. Anyone desirous of taking advantage of these arrangements should apply at once to Lieutenant and Quartermaster H. G. James, 22nd Battalion (R.) King's Royal Rifles, Norfolk House, Laurence Pountney Hill, E.C., or to Captain Briggs, 23rd County of London Battalion (T.), 27, St. John's Hill, Clapham Junction.

Housing Munition Workers.

The difficulty of finding house accommodation for munition workers at Woolwich Arsenal and at the works in south-eastern districts continues. It is stated that there is not a small house for a working-class family to be had in the borough, and rooms also are unobtainable. Efforts have been made to meet the difficulty, and as quickly as possible official schemes were prepared. The Well Hall estate, laid out by the Office of Works, a settlement of neat grey houses with red roofs on the road between Woolwich and Eltham, has provided for some 1,300 families, and with lodgers probably the dwellings are crowded. Land is to be had at Lee, Eltham, Plumstead Wickham, and elsewhere in and near the borough, and some 2,000 huts have been erected or are in course of construction. Hostels for women munition workers are also being set up with all possible speed, but the urgent demand cannot be overtaken.

FINANCE AND ROAD-MAKING.

Speaking at the Westminster conference on arterial roads, of which a brief report was given in last week's issue, Mr. Hayes Fisher, M.P. (Parliamentary Secretary to the Local Government Board), said he was told that the Traffic Department of the Board of Trade was in process of being abolished, and the finances of the Road Board might be transferred after the

war to the Local Government Board, while the Home Office might well limit their functions to the mere regulation of traffic. Therefore they were left to the conclusion that there would shortly stand out one Government Department which would have more or less the control of the design, planning, and carrying out—always in conference with the local authorities—of the great main arterial roads. It would be perfectly idle to disguise the fact that, however much they might plan, there stood before them the great financial monster that was strangling everything at the present time and preventing their moving towards the solution of great social and traffic problems. It would be idle to deny that the National Exchequer was not in the same position, and was not likely to be for years to come, that it was in 1914, when it looked as if the Chancellor of the Exchequer was going to place some millions of money at the disposal of the country for the solution of road traffic and other problems. They could, however, turn their attention to the urgency of at once fixing the line of certain roads where a great deal of open land was now available that would get quickly built on and the roads blocked unless they were fixed. One could not be at the Local Government Board without knowing that every day schemes for better water supply, better drainage, and better sanitation had to be turned down, and when the war was over what would most be wanted in this country was capital.

NEW HOSPITAL FOR SOUTH SHIELDS.

With the object of providing increased facilities for dealing with infectious diseases, and waging a more effectual war upon the white plague, the South Shields Corporation have decided, when the times are more propitious, to embark upon an important scheme for erecting a new hospital.

Consisting of 28 acres, the site chosen for the institution is situated to the north-east of Cleadon village and abuts on to Sunnyside Lane. It is protected from the east by some high ground and has a sloping fall from north to south of over 70 ft., so that in every respect the site is an ideal one for the purpose intended.

The plans have been prepared by Mr. Leslie Roseveare, borough engineer, in the light of knowledge gained through visiting some of the best hospitals in the country, and the institution will therefore be thoroughly up to date and provided with the most modern equipments.

Generally the accommodation for infectious diseases will consist of 124 beds, and for tuberculosis sixty-six beds. The fever patients will be treated in five pavilions, the dimensions of which will be 195 ft. by 38 ft. over all, and each pavilion will be provided with sun rooms, and verandahs with glass roofs.

Respecting the tuberculous section of the institution, there will be a nursing pavilion 338 ft. long, and three separate pavilions for men, women, and children. A sheltered playground has been set apart for the children, and a large plot has also been reserved for the male patients to cultivate.

Other features of the scheme include commodious administrative and discharge blocks, and laundry premises which will be fitted with the very latest appliances. The whole of the buildings will be constructed of brick with terra cotta facings.

ELECTRICAL NOTES.

Electric Traction for Goods Trains.

The employment of electric traction for passenger trains has been such a success that sooner or later railway companies were bound to consider its application to goods trains. It is only realised by few people that goods traffic is more important to railway companies than passenger traffic. For instance, during 1913 the receipts of British railways from the carriage of goods, mails, and parcels were 62 per cent. of the total, whilst on the North-Eastern Railway, which covers a highly industrial area, the percentage was as high as 72. Hence, the establishment of an electric service on a mineral railway is a fact of great importance in railway progress, because if found successful and economical it will, no doubt, lead, as in the case of passenger traffic, to the handling of a much larger amount of traffic on a much more economical basis.

The N.E.R. have been one of the pioneers of electric traction, for their Tyneside suburban lines were electrified in 1904; and five years ago they commenced to give serious attention to the application of electric traction to their many branch and main lines, both passenger and goods. The company's consulting engineers, Messrs. Merz and McLellan, were asked to report on the whole question, and as a result of their investigations with the railway's chief mechanical engineer, the directors decided to commence with the electrification of the mineral line between Shildon and Newport. The route is eighteen miles in length, but the conversion involves about fifty miles of single track, including sidings. The line carries mineral traffic between the coalfields of south-west Durham and the ironworks and blast furnaces of Middlesbrough. Part of the route runs over the original Stockton and Darlington railway, which was the first public railway in the country for conveying passengers and goods.

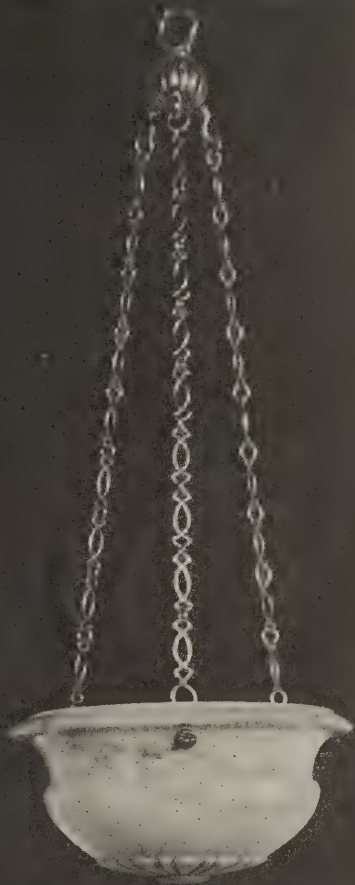
Three Electric Locomotives.

The new system has been inaugurated with a night service of three electric locomotives, and when the track work now being carried out in daylight is completed a full electric service will be run. The electric locomotives are capable of hauling a load of 1,400 tons at a nominal speed of twenty-five miles per hour on the level and of starting a train of this weight on a 1 in 300 gradient. The driver benefits greatly from the conversion, because he has no fire, boilers, feed pumps, etc., to attend to continually, and the control of the electric locomotive is so simple that his whole attention can be concentrated on the signals. The cab of the electric locomotive is much more roomy and comfortable than on a steam locomotive, and the net results of the change are greater safety, more rapid working, and reduced strain.

From the operative point of view the electrification involves a much greater efficiency. The steam locomotive has to carry its own fuel, consume it under wasteful and difficult conditions, and convey the mechanical energy through complex gear which needs continuous adjustment and frequent repair. On the other hand the electric locomotive takes its energy from overhead wires which are supplied with electric current from a fixed power house where the fuel is consumed in the most efficient manner. The moving parts consist of powerful and robust electric motors which merely revolve and require little attention and maintenance. The electric locomotive can be at work practically all the twenty-four hours, whilst its steam predecessor has to spend a good part of its time in the running shed, taking in coal or water, or being overhauled and generally examined and "tuned-up."

The "All-Nite-Lite" Transformer.

This is a new little device introduced by the B.T.H. Co., Ltd., consisting of a small transformer in a metal case, having a lampholder adaptor at one end and a small lampholder at the other end. It is intended for use on alternating current circuits in hospitals, nurseries, siderooms, passages, cellars, etc., where lamps of small candle power are required, especially at night. The metal filament lamp is not made for high voltage supplies for less than twelve candle-power, and these are too bright for the purposes in question, whilst if they are obscured or shaded they are wasting a good deal of energy. The device in question can be wound for any primary voltage between 100 and 250, and the secondary winding has an output of about $\frac{1}{2}$ ampere at 6 volts. A battery lamp of this voltage is employed giving three candle-power and taking about 3 watts. The power consumption of the "All-Nite-Lite" transformer is so small that at 5d. per unit for current the device, with lamp, has a running cost of only 1d. for sixty hours. It is finished in satin brass and measures only $3\frac{1}{2}$ in. over all. It can be inserted or removed from a holder in a moment, and is, of course, available for use wherever a lamp exists in a house supplied with alternating current.



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LATE CONTRACTS, etc.

BUILDING.

June 5.—**ADAPTATION.** Milnsbridge. —Adaptation of the Liberal club, Milnsbridge, for the purpose of a telephone exchange, for the Commissioners of H.M. Works and Public Buildings. Particulars from H.M. Office of Works, etc., Storey's Gate, London, S.W. Deposit £1 1s.

June 5.—**POLICE COURTS, ETC.** Pontypridd, etc.—(1) Erection of a new police court, etc., at Pontypridd; (2) erection of a new police court at Pontlottyn, for the Standing Joint Committee of the Glamorgan Quarter Sessions and County Council. Particulars (No. 1) from Pontypridd Police Station, and (No. 2) from Police Station, Pontlottyn.

ENGINEERING.

June 5.—**PUMPS.** East Cowes.—New or second-hand set of three-throw deep well pumps, suitable for a well 100 ft. deep, 5 ft. diameter (3 ft. 6 in. between girders), for the Urban District Council; capacity not less than 12,000 gallons per hour; steel-lined barrels, metal pump buckets and bottom valve, with all necessary suction pipe, stand pipes, pump rods, and delivery pipes. Particulars from A. E. Barton, Water Engineer, Town Hall, East Cowes.

June 15.—**WATERWORKS.** Bedford. —Laying of about two miles of 3-in. cast-iron mains with all necessary sluice valves, hydrants, services, etc., for the Rural District Council. Particulars from W. G. Daniels, Clerk, 115, High Street, Bedford. Deposit £1 1s.

PAINTING.

June 2. — **PAINTING.** Penybont (Wales). —Painting about 33 sewer ventilating shafts situated in the parishes of Pyle and Tythegston Higher, and about 26 sewer ventilating shafts situated in the parishes of Newcastle Higher and Ynysawdre, and about six sewer ventilating shafts in the parish of Llangynwy Middle, at Troedrhiwgarth, for the Penybont Rural District Council. Particulars from E. W. Davies, Engineer, Bryn Road, Tondy.

June 5.—**PAINTING, ETC.** Wolverhampton.—Painting and colouring at certain schools, for the Education Committee. Particulars from T. H. Fleeming, 10, Queen Square, Wolverhampton.

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THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, June 7, 1916.

Volume XLIII. No. 1118.



HOUSE IN ST. HELEN STREET, ABINGDON, DATED 1732.

THE ARCHITECTS' & BUILDERS' JOURNAL.

JUNE 7, 1916.

TOTHILL STREET, WESTMINSTER.

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EDITORIAL.

HARVARD UNIVERSITY has not only a Faculty of Architecture, but, as an addendum to it, a School of Landscape Architecture, of which we are glad to have received the current prospectus. As there are ten "officers of instruction," and apparently about five-and-twenty students, what educationists call "individual attention" would here seem to have reached the highest possible standard for a university, if we discount the legends of the Oxford professor who commonly delivered his lectures to the college cat as sole auditor. But this fine movement at Harvard will assuredly grow, and one can confidently anticipate the time when the lectures on landscape architecture will have become so popular that—to adopt an American locution—"the railroads will run trips to them." It is an advantage of the subject that one cannot obtain a thorough mastery of it indoors. It is a peripatetic study, and is recognised as such at Harvard, where, while the types of garden and landscape design are severally taken up in the historical order of their highest development, and are critically described with the aid of plans, drawings, and photographs, reference is made whenever possible to actual examples that are to be found within easy reach of the students. Moreover, a travelling fellowship, open for competition to Masters in Landscape Architecture of Harvard University, gives its lucky holder a year of study abroad; and graduates of the school are eligible to compete for a Prize of Rome of the American Academy in Rome, which carries three years' study in Europe.

* * * *

Landscape Architecture, in the Harvard view, includes the principles of city planning, the course in which treats the subject comprehensively, the aim being to develop the idea of the modern city as an organic whole. It will deal with "the fundamental considerations on which the functional planning of the modern city is based—topographic, climatic, social, hygienic, economic, historic, and æsthetic"—and a good many other "considerations" which need not be here capitulated; the topographic, climatic, and other "ics" of the series being quoted, we must confess, because they re-echo Polonius's "tragical-comical" enumeration of variations of the drama. A certain tendency to verbosity in the drafting of the programme, however, does not vitiate its substance, and we greatly admire the thoroughness with which the subject is, so to speak, laid out. Nothing that directly relates to it has been omitted. Even forestry—which might be thought to require a separate school to itself—is included, but is no doubt kept subsidiary to the main scheme, so far as the landscape artists are concerned, although possibly those who wished to specialise on forestry would find this course an excellent introduction to a subject that, because of the

threatened exhaustion of the world's timber supply, has of late years assumed vital importance. Harvard is to be congratulated on the progressive spirit shown in establishing this School of Landscape Architecture, and we trust that the example will not be lost upon other universities.

* * * *

Forestry is just now a prominent topic of discussion. Thrown upon our beam-ends, as it were, by the shortage of foreign supplies of timber, we are naturally inclined to listen with more than the ordinary patience to those enthusiasts who lose no opportunity of urging the desirability of using every possible means of promoting forestry. It is confidently affirmed that timber can be grown at a profit in parts of this country that would otherwise remain unproductive, and certain tracts of Scotland are cited in proof. It is shown, also, that those Continental countries that have addressed themselves energetically and scientifically to the cultivation of timber and to the promotion of schools of forestry are reaping substantial advantages from their foresight and enterprise. Although, in a small country like ours, vast timber forests are out of the question, that is no reason for allowing to run waste so many spaces (amounting in the aggregate to a very considerable acreage) upon which timber might profitably be raised.

* * * *

This matter of timber-growing is one in which, from whatever cause, this country holds obstinately against all comers absolutely the lowest place. Its 2,500,000 acres of woodland represent only 4 per cent. of the total area; and it is rather humiliating to contrast this with the percentages of other countries—Norway's 25, Germany's 26, Russia's 33, and Sweden's 44. Only reckless improvidence and gross neglect could have brought so naturally well-wooded a country to so ignominious a position. Industrial and commercial development, and increased facilities of importation, have no doubt made forestry seem negligible. In the day of quick returns it may have seemed absurd to plant for posterity, to invest in acorns in order that the third and fourth generations might realise on oaks; and a very tempting means of getting rich quick was to destroy a forest and build a factory. But to-day there is a clearer necessity for economising resources, besides a more corporate or more national feeling that looks further ahead in subjects of social welfare. While it cannot be supposed that our utmost endeavours in forestry will ever produce more than a fractional portion of the timber supply this country will always need, it is nevertheless an important point of economy to develop the country's resources to the utmost; and the State—to whom we chiefly owe the preservation of such forests as we have—may well be urged to extend its operations in this kind. Miles upon miles of land forming the margins of railway

cuttings is running to wicked waste. Since so much of the world's timber supply is consumed in railway sleepers, the companies might reasonably be compelled to compensate some of their extravagance in wood by growing a little beside their lines.

Before the war, our annual import of wood was creeping up towards thirty millions sterling. Much of it came in the form of ready-made doors and window-frames, and other kinds of joinery. Why this joinery could be worked more cheaply abroad than at home is a question so strongly tinged with party politics and industrial polemics that to touch it was to stir up strife between the Ins and the Outs, between Free Traders and Protectionists, and between the organised employers and the trade unions, with the effect of embittering and obscuring the issue. Whether it was due to the lower cost of Scandinavian as compared with British labour, or whether the foreigner got his advantage from the more extensive use of labour-saving machinery (and of course a combination of these conditions is possible), are questions that may now perhaps be reconsidered with less heat.

These are problems that the National Federation of Building Trades Employers should investigate very thoroughly; and in the course of the inquiry it might possibly appear that the more general adoption of effective machinery and a liberal inducement to the workers to use it to the utmost advantage would be of enormous benefit to the home industry. It may seem to be a rather paradoxical proposition that more highly paid labour and more costly machinery should yield higher profits to the employer, but we believe that this is what happens in America; and the resolution of the paradox is that to spend a little more and to get a great deal more for it is good finance. To secure to the utmost these all-round benefits, it would be first necessary to convert the workers to the view that it is to their best interest to produce as much as they can, not as little as they dare; but, whether or not the workers adhere to their dull dogma of "ca' canny," it behoves employers to bring their plant and labour-saving machinery up to date, and to scrap without remorse the appliances that have been superseded by inventions that are demonstrably of higher productive or profit-earning capacity.

On the subject of land transfer we print this week a communication in which the history of tenure is lightly sketched. Slight as it is, this abstract may serve very well as an incentive to further study of the subject by those who happen to have neglected it, and to revive the interest of those who may possibly have forgotten much more than the article attempts to tell them. Our contributor agrees, we notice, with our opinion that those who oppose simplification because it seems to threaten their professional interests would, in the issue, find the changes positively beneficial to them. Mr. Eustace J. Harvey, who in 1910 published with Messrs. Longmans a very useful book on "Land Law and Registration of Title: a Comparison of the Old and New Methods of Transferring Land," which he dedicated by permission to Lord Loreburn, who was then Lord Chancellor, mentions what he calls a "welcome exception" to general professional hostility. In a volume of evidence published by the Royal Commission on the subject, half a dozen land agents and dealers testified their keen appreciation of the ease and cheapness with which registration with an absolute title enabled them to effect sales on building estates. That is reasonable proof of our contention with respect to estate agents and others who are more or less directly in touch with the building industry. That the building industry will profit greatly by land-law reform is

beyond question; and it naturally follows that those who are professionally associated in it will share in the increased prosperity. This includes even the lawyers who are interested in real estate, and consequently those of them who oppose the desired reform seem to us to be standing in their own light.

A correspondent whose letter is printed in the present issue seems to think that to propose land transfer reform is to tilt at windmills. It may be gathered that while he is by no means unsympathetic towards our aim he is without hope that sanity can prevail against vested interests, or cheapness and simplicity against fussiness and expense. It is well that he should express this typical view, because it is wholesomely provocative. To declare roundly that a thing simply cannot be done is to incite a vigorous attempt to do it. *Credo quia impossibile* has not lost its ancient force. Spread sedulously a gospel of despair on this question and the country will rise in irresistible rebellion against it. Labour to convince the public that land transfer is a matter in which they must for ever tamely submit to be lawyer-ridden and registration of title will become a popular pastime. Adherence to the present costly, dilatory, and irrational system is surely symptomatic of an innate perversity that may perhaps be convertible to finer issues. In our view, this will be the net effect of our correspondent's letter, whether or not this interpretation accords with his intention. Although we feel sure that Mr. Quenneil will not object to the *badinage* with which our correspondent has enlivened a subject that naturally tends to deadly dullness, we are rather disposed to question his taste in alliteration, which has no more relevancy than the association of Macedon with Monmouth. One point that strikes us with considerable force is that, in his despair of converting the lawyers, and in his fear of the multiplication of bureaucracies and pensions, he discounts the influence of the war as a solvent. Surely its lessons of self-sacrifice and economy, to say nothing of its enforcement of these and other virtues by compulsion when that is seen to be necessary, are capable of a direct application to the problems of land transfer.

All London knows that the complaints in the press about unwatered roads are based on more or less painful experience. Doctors could bear witness that affections of the eye, throat, and chest have increased to an alarming extent in consequence of the abandonment or insufficiency of road-watering; while shop-keepers could attest that the "grit of attrition" blown into butter, for instance, does not improve its flavour, though it add to its weight; while the sanding of sugar is a delicate operation that should be done, if at all, with artistic discretion and restraint, and should by no means be left to the winds of chance. And yet, in spite of all this collateral evidence, the chairman of the Public Health Committee of the London County Council said last week that no metropolitan borough council, so far as he knew, was proposing to abstain from street watering during the summer, and there was no information to show that any of them acted in a way likely to endanger the public health. He added that "the committee was making all necessary inquiries." He should "inquire within"—that is to say, he would gain the positive information that his committee so strangely lacks if he would but walk along one of the main-travelled roads of some arid suburb, and take the evidence of his own eyes, throat, and nostrils: a dangerous experiment, it must be admitted, if all that the doctors tell us be true about the deadliness of wind-borne detritus and microbe-laden dust.

LAND TENURE AND BUILDING INTERESTS.

[COMMUNICATED.]

IN common with all other subjects of high importance to the community, land questions are warped and coloured by strong political prejudice. It is difficult, even impossible, to discuss them without creating a suspicion of *parti pris*. Moreover, the land is so intimately and inveterately associated with class distinctions that any attempt to alter the conditions under which it is held is immediately construed as a renewal of ancient hostilities—of a struggle that, as has been said, “must be nearly coeval with man’s social existence.” Whether that struggle is to be perpetuated, or whether the community has at length risen superior to it, depends on whether or not the present war shall confirm or dissolve the feudal idea that is interwoven almost inextricably with “landed interest” or “landed caste.”

Any proposal for land reform is almost certain to be met with strong, not to say bitter, antagonism by those who are naturally much more concerned in the conservation of their own private interests, prerogatives and privileges, than in advancing the public welfare. At least, that was how the matter stood before the war. For many years past, however, there has been a progressive weakening upon the feudal view of the land. Indeed, when first, in Norman times, possession directly or indirectly through conquest was relinquished by the original holder from the Crown, a beginning was made in that freedom of transfer which has broadened slowly down from precedent to precedent—of a movement that may soon reach its climax in a freedom of exchange from which the last vestiges of feudalism will have finally disappeared.

Family pride in land is a heritage from Saxon times. “In an age when freedom was the exceptional condition, the ownership of land was the mark of a free man, and ample territory the inseparable appanage of rank. The modern conveyancer’s broad separation between ‘real’ and ‘personal’ estate was strongly marked in the practices of Saxon life, but with far better reason when the rareness and insignificance of other forms of property gave truth and meaning to the distinction. No amount of gold or ‘chattel’ property conferred the franchise. Land alone was recognised as the source of all personal privilege and the basis of civil rank.” Land was thus invested at the outset with a peculiar sanctity which it has never wholly lost. Obviously this traditional view does not make for reform. In the Norman rule it was accentuated. In the land system before the Conquest, three great rights were recognised—(1) that of alienation, or transfer by sale or gift; (2) that of disposal by will; and (3) that of disposal by inheritance. Under Norman feudalism, the first two rights were virtually abrogated, and the third was completely changed from its original character, so as to subserve only the feudal rule of succession.

It was the Normans who introduced the theory that the Sovereign is the paramount proprietor of all land, a theory that, it is held, was utterly alien to Saxon ideas and institutions; but under the Saxons all land remained subject to three public charges—military service, the repair of bridges, and the maintenance of royal fortresses. Transfer was very simple. Grants of land were enrolled in the Shire-book, after proclamation made in public Shire-mote for any one to come in that could claim the lands conveyed. As Mr. C. Wren Hoskyns has said: “It might almost shame a reader of our Blue-Books on Sale and Transfer of Land to find a Registry of Title, and, what was then almost its equivalent, a Register of Assurances, existing in the ancient English county courts while the age of Christendom was yet written in three figures.”

Apparently the Saxons knew nothing of the claim of

primogeniture, by which the eldest son succeeds to the inheritance. They preferred the custom of gavelkind—which, as Mr. Quennell reminded us last week, still survives in Kent—by which the children all inherit; and Borough English was the exact converse of primogeniture, as it provided for the succession of the youngest son. William the Norman, however, formally established the doctrine of the universal supremacy of the Crown, and exacted the solemn acknowledgment of it by all the landowners of England, at the great assembly which he convened at Salisbury in 1086. Complications arose from the use of a foreign tongue—Norman French—in all legal documents, which no layman could understand; and, even though some sort of English has been adopted, it may be said without very much exaggeration that the law is still to a great extent “screened by its language from popular intelligence.” We consequently enjoy “the most complicated and technical system of real-property law ever exemplified in one and the same country,” while, as Mr. Wren Hoskyns has further observed, “the tyranny of ‘relief’ and ‘wardship’ continued, through successive centuries, to generate a systematic growth of legal legerdemain to escape their burdens—a complete science of fiction and evasion—which still unhappily characterises the laws that govern real property in this country.” But, in mere justice to an honourable profession, let it be noted that lawyers—certainly not modern lawyers—did not invent this legerdemain.

By mortmain, ecclesiastical corporations escaped certain burdens of succession imposed on the laity, and this immunity was extended by an abuse of the process of common recovery. Landowners were induced to become the defenders in collusive lawsuits, in which the ecclesiastical plaintiffs sued for and recovered the lands as their own, the defence being naturally feeble. This trick was circumvented by the Statute of Fines of the reign of Henry VIII., investing the owner of the “Use” with the “legal estate,” and henceforward the machinery that had been employed in the creation of the Use was adopted for the transfer of land by deed without publicity or registration. “Thus,” says Mr. C. Wren Hoskyns, “our whole present system of unregistered conveyances is derived from an original fraudulent evasion of the law.” Evil is the root, and bitter is the fruit. Moreover, the early simplicity of transfer accompanied by public registry was superseded “by secret conveyance through the instrumentality of private deeds, whose language was cast in the forms and phraseology derived from the reiterated struggles of ecclesiastical and legal ingenuity against feudal and statutory restrictions.”

All this complexity (and there is a great deal more than this brief sketch reveals) renders necessary the training and employment of an army of experts in the land laws. Quite naturally they are, as a body, strongly opposed to any alteration which seems to threaten their existence, and it is impossible not to sympathise with them. At the same time, it seems highly probable that in the long run they would, directly and indirectly, benefit by simplification of procedure. Dealings in land would become immensely more frequent and more numerous. Thousands of acres now lying idle would be brought into profitable use. Necessary covenants of many kinds would increase legal business (including, unfortunately, litigation) enormously, and the enhanced agrarian and industrial prosperity of the country must necessarily bring corresponding and commensurate good-fortune to the professional classes.

Land is overloaded, one is very well aware, with many kinds of burdens, and its profitable use is hampered by

many kinds of restrictions; and many of these burdens and restrictions operate adversely against building. A bare enumeration of them would be a considerable task. For the moment, it seems wise not to reopen the whole tremendous and extremely complicated question of land tenure, but to concentrate on this one point of land transfer, which in itself is by no means simple. In glancing at a table showing about a score of instances in which the purchase price of land is compared with the purchaser's expenses, irrespective of stamp duty, etc., one is chiefly struck by the inequality and irregularity of the burdens. Thus, the purchaser paying £1,095 for land was charged £21 10s. expenses; while the purchaser of a plot at £100 had to pay £23 14s. 3d. expenses; and he who bought for £1,800 at a charge of £24 os. 10d. got off very lightly as compared with the buyer at £746 who had to pay £48 12s. 6d.; while the buyer at £1,260 for £17 2s. 8d. was strikingly lucky in comparison with the buyer at £230, whose expenses ("irrespective of stamp duty, etc.") amounted to the preposterous total of £39 13s. 3d. While the average of eight cases was not quite 6 per cent., that in one of the above-cited instances was obviously more than 23 per cent., to say nothing of the stamps. No one seems able to tell you beforehand what the expenses are likely to be, and this glorious uncertainty is one of the chief deterrents to purchasing. What is more certain (but not absolutely so) is that the less the value of the land, the higher the percentage for fees; and, as was shown in this journal a week or two ago, it may happen, with very small plots, that the expenses may equal, or even be greater than, the price of the land.

This question of land transfer should surely be taken up by the architectural and building trade organisations with all the vigour and influence they can command, not merely because the present system is strongly adverse to their own particular sphere of activity, but because it is a drag on national prosperity. Mr. Hoskyns uttered no mere party cry when he exclaimed: "Free the land: release it from the shackles in which time, and custom, and interests—long passed away [not all]—have entangled it, obstructing its adaptation to the uses of modern life and presenting it as an anachronism on the face of our institutions."

J. F. D.

[This being a thorny subject, our columns are open to discussion of its pros and cons.—EDS. A. AND B.J.]

ARCHITECTS AND MILITARY SERVICE.

Mr. Ian MacAlister, secretary of the Royal Institute of British Architects, sends us the following announcement in reference to architects and military service:

The 20th London Regiment (T.) has vacancies for some 500 men. If sufficient architects joined this regiment an "Architects' Company" would be kept together during training.

The regiment has two battalions in France, and a third battalion is being formed for the purpose of supplying drafts to the First and Second Battalions. Intending recruits should apply to Major Dodd, Holly Hedge House, Blackheath. (Telephone: Lee Green 962.)

Lieut.-Colonel S. W. Cranfield (A.R.I.B.A.), Commanding the 3/7th D.C.O. (Middlesex Regiment), states that he is prepared to take fifty or sixty architect recruits in his battalion. They must be medically fit for service abroad.

Intending recruits should write to Headquarters, 3/7th D.C.O. (Middlesex Regiment), Solefields Camp, Sevenoaks, and they will receive a free railway warrant. On reporting they will be enlisted and will be given leave to settle up their private affairs.

CORRESPONDENCE.

The Editors disclaim all responsibility for the statements made or opinions expressed by correspondents, who are asked to be brief, and to write on one side only of the paper. Every communication must bear the name and address of the sender.

Dublin Town-Planning Scheme.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—As one of the competitors in the much-talked-about Dublin competition, I should like to thank you for your editorials on the subject in this week's issue, in which I think you have taken a very fair and sound line. I do not know whether you knew that a strong protest and memorial had been made by many of the competitors against the decision to postpone awarding the competition, and that the Town Planning Institute has also been taking action in the matter. As the competition naturally embraced the centre of Dublin just as much as the outskirts, Sackville Street was one of the most important sections that we had to deal with.

Just to show you how intensely important it is that something should be done at this present moment, I should like to draw attention to the remark on page 230 made by the Lord Mayor of Dublin in your quotation from the "Daily Mail." The remark is as follows: "This point, i.e., the centre of Sackville Street, is a hub of our city."

Here is one of those cases in which the necessity for a comprehensive town-planning scheme is most clearly illustrated, for it is quite possible, and I may even add probable, that some of the competitors would have so suggested the remodelling of the centre of Dublin that Sackville Street would *no longer be the hub of the present tramway system*. From this you will see that even though Sackville Street were rebuilt and a circus made at this point (a manifestly ridiculous suggestion artistically), this in itself would prove a most short-sighted policy, as it might quite possibly happen that a few hundred yards either to the right or the left was a centre much more suitable for the traffic centre of the city.

On the face of it I think you will agree that a monumental street like Sackville Street, which one might compare with the Avenue de l'Opéra at Paris, is not precisely the spot one would suggest for the meeting ground of all the trams of the city!

PATRICK ABERCROMBIE.

Department of Civic Design, Liverpool.

Land Transfer and the Building Industry.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—Mr. Quennell as an architect I hold in high esteem, but Mr. Quennell as a social reformer is as unconvincing as a certain popular novelist when in a like disguise. His latest hobbies, land transfer, and the reform of the law of light and air, are, I am much afraid, likely to exhaust all his optimism and energy.

Turn to the House of Lords debate on land transfer, and you will find it is there recorded that successive Lord Chancellors have been in favour of the simplification of the process, rightly described as unique in its costly futility. But Lord Chancellors can afford to call spades spades, whereas the average lawyer shows no sign of desiring to call them anything but agricultural implements, or something longer, and, so far as land registration is concerned, is bitterly hostile. Too often they give sound reasons for hostility, and the critic of Mr. Quennell's paper is not, I fear, the only one whose criticism is well-founded.

From the "Times" report of the House of Lords debate I would quote the words of Lord St. Aldwyn: "It was not to be expected that under any conceivable

system land could be passed from hand to hand as simply as stocks and shares were transferred. There was another difficulty—the question of cost. The Lord Chancellor, when he established new rules as to fees in 1908, very wisely lowered the fees on applications for absolute title. The great defect of the system hitherto had been that, as a rule, absolute title had not been given—only possessory title. Possessory title did not clear the title before the date of registration at all, so that with every fresh transaction after the grant of possessory title it might be necessary to go into the whole history of the matter before the registration of the possessory title. What was wanted in this matter was finality." Before Mr. Quennell crowns King Log, he must be quite sure he has deposed King Stork. To cry "Vive le Roi" to one, and pay tribute to both monarchs, would be neither amusing nor profitable.

Further, until the lawyer is converted to land registration (about as hopeless a task as converting the Chinese) there is little chance of converting the bulk of his clients, who listen to his words of wisdom with something of awe. Nor is a miserable land registration certificate, banned as it is by the High Priests of the Law, likely in popular imagination to take the place of real "Deeds" on real parchment, with lines two feet long.

Again, I doubt if the creation of a Land Registration Department by every county borough is going to do anything to cheapen the transfer of land. Every year sees the increase of the already far too numerous officials, everyone representing salaries and pensions added to the load of the over-burdened ratepayer. Such a Department would inevitably be rate-subsidised, so that the capitalists are to be relieved of their law costs at the expense of the landless.

As to the law of light and air, here indeed is "Don Quixote Quennell." It sounds something like high treason to suggest that a mere Building Act could be used to deprive a man of his rights at Common Law; surely nothing but land transfer as practised in Belgium and Serbia could accomplish this.

ARTHUR J. USHER.

Houses of the Late Georgian Period.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—I have many times intended to write expressing my warm appreciation for the unique series of plates of small houses of the Late Georgian Period which you have been publishing for some months past. In my opinion, and I am sure there are many who think the same, they are not only delightful in themselves as examples of quiet, refined, unostentatious domestic architecture, but they do a very real service as a corrective to the miscellaneous jumble which has, unfortunately, been so zealously favoured for the "garden city." The series, moreover, has shown us not only complete views of these houses, but also detail views of their pleasant doors, windows, etc., and in this way the representation of the exterior has been rendered complete. I hope, however, that it may be possible also to include views of the interiors of some of these houses. They are the last survivors of the English architectural tradition, so vigorously alive in the time of Sir William Chambers, and gladly would I exchange that manner of design for the untutored achievements of the present day—for the most part the work of architects who have received no architectural training other than what they were able to acquire haphazard in the days of a pupilage made smooth by the payment of a substantial premium.

London, S.W.

R. T. W.

THE PLATES.

Bank Premises, Moorgate Hall, London, E.C.

THE branch office of the London County and Westminster Bank in Moorgate Hall, Finsbury Pavement, displays a refined front—of cast bronze built up on a steel frame—which is noteworthy for the appropriate *metallic* appearance that has been secured; too often in such cases the effect is that of wood or stone. The suggestion on which the design is based is that of a treasury, and the features of the ornamentation, such as the guilloché (money ornament, are in keeping with this idea. The bank front was designed by Messrs. Richardson and Gill and executed by Messrs. Bainbridge Reynolds.

Monument to Bishop Federighi, Florence.

This is perhaps the finest example of Luca della Robbia's art applied to a sepulchral monument. The whole design is simple and noble. The recumbent figure of the prelate is so wonderfully modelled and coloured that the beholder starts back involuntarily at what he imagines to be an actual corpse. Rarely indeed has the sleep of death been so naturally portrayed. Of the exquisite floral border Vasari wrote: "The fruit and flowers are so life-like and natural that, with oils upon a panel, they could not be better done." The architectural adjuncts and framework form a model for all such monumental works. It is opportune here to give the following note on the development of the art of glazed terra-cotta in the hands of Luca della Robbia: For the finest pottery, white opaque clay from Siena—commonly called St. John's Earth—was used. This, when half-baked, was coloured with a substance called "Marzacotta," composed of 30 parts of pure silicate of potash (from pure sand and the alkali of tartar deposited by red wine) to 12 parts of oxide of tin. The object so covered was returned to the furnace, where it gained its gloss or lustre. This stanniferous enamel Luca used, varying his quantities and adding ingredients experimentally. His sculpture-palette was very limited at first. Many a tint which he wished to give to his clay-fatted models was dissipated or transfigured in the fire. His first tone was white, grading from coldest chalk to warmest cream; here he met little or no difficulty. Then blue, cobalt and opaque, the blue of the serene Tuscan sky, followed; blue because it came through the furnace best—a fact to be noted in the pottery of all nations and periods. To blue he added tentatively other hues, at first faint and unassured. And then gradually we note, in studying the range of his creations, delicate shades of violet, quiet greens, and subdued browns for backgrounds, with drabby yellows, coppery reds, and pine-needle greens, for accessories, flowers, foliage and fruit, etc.

Staircase Hall, Ely House, Dover Street, London, W.

Ely House, Dover Street, erected from designs by Sir Robert Taylor (1714-1788), is now swallowed up in the Albemarle Club, and the original interior features have disappeared in the process of remodelling. The staircase hall had a balustrade of finely wrought iron, and was covered by a lantern light enriched with some vigorous yet delicate plasterwork, as the plate shows.

Door to Porte-Cochère, Paris.

Paris still retains a number of its old houses of seventeenth- and eighteenth-century date—sumptuous residences of the *ancien régime*. The door shown on the plate is from one of these, the house of the Ambassador of Holland in the Rue Vieille du Temple. The embellishment is admirably arranged in the six panels, and the sculpture on the overdoor completes a most pleasing composition.



Photo : Bedford Lemere & Co.

CURRENT ARCHITECTURE (SERIES III.). XXXVII.—BANK PREMISES, MOORGATE HALL, FINSBURY PAVEMENT, LONDON, E.C.

RICHARDSON AND GILL, FF.R.I.B.A., ARCHITECTS.

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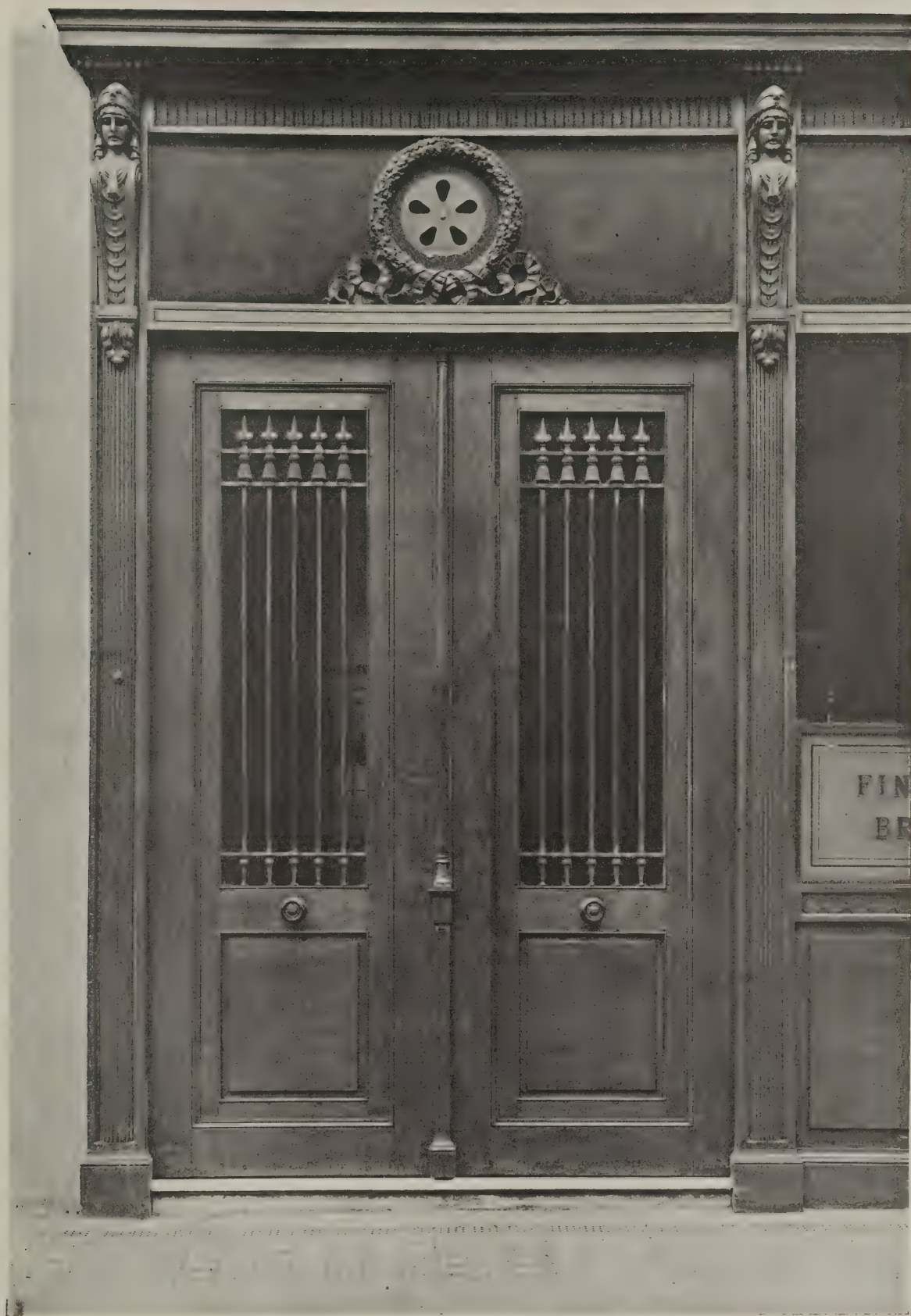


Photo: Bedford Lemere & Co.

CURRENT ARCHITECTURE (SERIES III.). XXXVIII.—BANK PREMISES, MOORGATE HALL, FINSBURY PAVEMENT,
LONDON, E.C.: DETAIL OF ENTRANCE.

RICHARDSON AND GILL, FF.R.I.B.A., ARCHITECTS,



MONUMENTS. XIX.—MONUMENT TO BISHOP FEDERIGHI IN THE CHURCH OF THE SACRED TRINITY, FLORENCE.
BY LUCA DELLA ROBBIA.

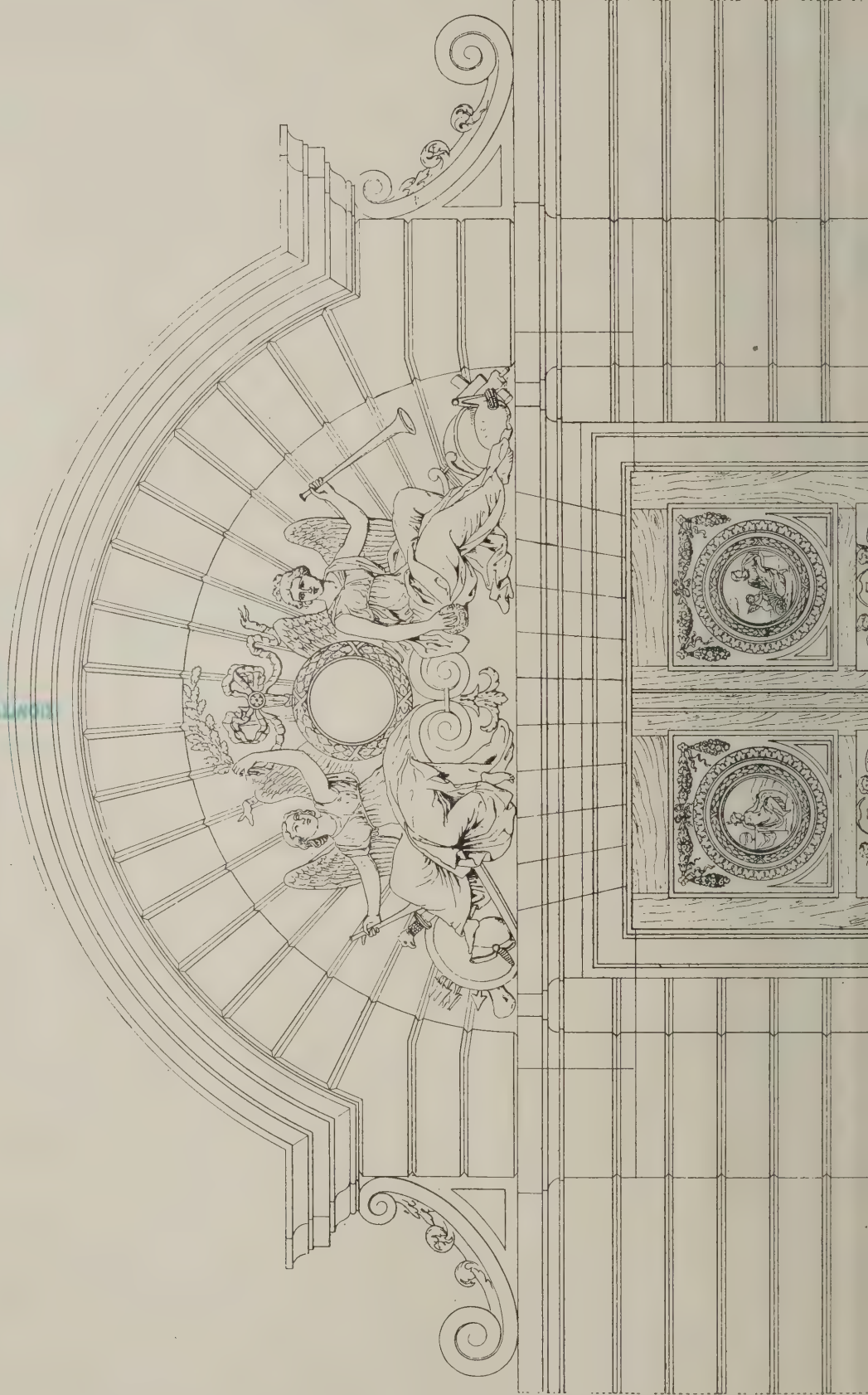


ENGLISH INTERIORS. VII.—STAIRCASE HALL. ELY HOUSE, DOVER STREET, LONDON. W.

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PORTE COCHERE
Ancien Hotel de l'Ambassade de Hollande.
Rue Vieille du Temple a Paris

Echelle de 1 2 3 4 mètres.

DOORS AND DOORCASES. V.—HOUSE OF THE DUTCH EMBASSY, RUE VIEILLE DU TEMPLE, PARIS.

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LEGAL.

An Architect's Claim for Fees.

May 24. Cambridge County Court. Before His Honour Judge Wheeler, K.C.

In this action, the plaintiff, Mr. Alexander Paul Macalister, F.R.I.B.A., architect and surveyor, of 20, St. Andrew's Street, Cambridge, sued Mr. L. E. Taylor, motor engineer, Norfolk Street, King's Lynn, for £92 11s. 2d., alleged by plaintiff to be due to him by defendant for professional services rendered.

Mr. W. Valentine Ball, instructed by Mr. S. J. Miller, Cambridge, appeared for the plaintiff, and Mr. Gerard Dodson, instructed by Mr. Page, King's Lynn, for the defendant.

Mr. Ball stated that defendant, in May, 1915, wished to make alterations on his motor garage in King's Lynn, and consulted plaintiff, who inspected defendant's premises, and made a drawing of what was required. Defendant wrote to plaintiff stating that he wished it to be distinctly understood, before he entered into any expense, that he wanted to know what the charge would be. Plaintiff sent his scale of charges, which was the schedule approved by the Royal Institute of Architects. Plaintiff said his charge would be seven guineas if no further proceedings were taken in regard to the building. If the matter had stopped there, seven guineas would have been plaintiff's sole charge, but he now claimed for the following sums: To preparing sketch plan £7 7s., to making survey of site £5 5s., to negotiating with adjoining landowner and preparing plans for same £4 4s., to preparing ½-scale working plan £31 5s., to preparing bills of quantities £31 5s., cost of duplicating copies for contractors £5 10s., to preparing and depositing plans as approved by local authority £1 1s., to travelling expenses £6 14s. 2d.; a total of £92 11s. 2d. Plaintiff suggested alternative schemes, one of which he estimated to cost £2,400; the other, between £1,200 and £1,500. Defendant then wrote that the proposals did not meet with his approval, and later asked plaintiff to prepare plans of simply covered-in buildings, as he did not feel inclined to go to the amount suggested by plaintiff.

His Honour asked where the contract came in, to which Mr. Ball replied that it was contained in the correspondence. At a later stage, he continued, a request for a ground plan was made, and for that the recovery of four guineas was sought. Later, said Mr. Ball, defendant asked for further estimates regarding some extra details.

His Honour: I want to see some contract. There are twenty-one pages of correspondence, and no contract.

Mr. Ball replied that the contract was contained in a letter in which plaintiff said he had prepared the plans and estimates as on defendant's order. It was going to be alleged that plaintiff gave a definite guarantee that the cost would not exceed £1,250, but plaintiff could give no definite guarantee. He said the probable estimate would be £1,250. The cost of various items which were additional to the £1,250 was discussed also. Plaintiff, argued counsel, prepared the plans and sent them to defendant. He prepared the specifications, which he also sent. He prepared the bills of quantities and the copies of the specification and quantities, and obtained tenders, which turned out to be higher than what was expected. Thereupon defendant refused to carry out the work as prepared by plaintiff, but he did in fact erect the building, and he (counsel) would

prove that he used the plans made by plaintiff.

Plaintiff stated, in evidence, that he did not give a definite guarantee that the building would not exceed £1,250. Having got in the builders' tenders, witness saw the lowest tenderer, whose offer was reduced to £1,284 11s. Witness had seen the building since it was put up, and claimed that it was built from his own designs, with variations.

Mr. Matt Garbutt, architect and surveyor, secretary to the Practice Committee of the Royal Institute of Architects, said his committee had to do with questions of practice. He had examined the plans, specifications, bills of quantities, etc., produced in the case, and the charges were moderate. Building prices last year were very unsettled, and it was no good paying any attention to any estimates except those of responsible contractors.

The Judge said he would hold that all the charges were proper, honest, and reasonable.

Mr. Walter Shanks, builder, Chatteris, said he sent in a tender for the work for £1,796. The surveyor's fees were included in that sum. He subsequently received from plaintiff a schedule of reductions, and then submitted a reduced tender for £1,284 11s. 11d. He had seen the building now erected, and it was very similar to the one he tendered for. He saw plaintiff's plans in defendant's garage when he tendered for the work.

Mr. Herbert H. Dunn, architect and surveyor to the Cambridge County Council, said he had examined the bills of quantities, together with the specifications and the plans, and thought they were properly prepared, although there were discrepancies. Two different surveyors would probably make discrepancies.

Mr. L. E. Taylor, the defendant, said that the arrangement was that if the work was not to be proceeded with he was merely to pay 12 guineas for the first two items. He alleged that the architect had said the cost would not exceed £1,250. On the strength of that witness said he might go on with the steel work on his own responsibility, and plaintiff agreed to take full responsibility. He was so confident that it would not exceed the sum he had stated, that if he could not do it he would be content with the 12 guineas. Later he wrote to witness, saying that he hoped the cost would not be more than £1,250, as the price of materials had gone up. When it was suggested that the job would very likely cost from £1,800 to £2,000, plaintiff said that was all nonsense, that it would cost no more than £1,250. Plaintiff told witness later that he was surprised to know the work had come out so high, and witness then repudiated the claim. Plaintiff said if certain reductions were made he could reduce the price to the sum stated. Witness had never tried to get out of his bargain regarding the first two items, and had paid £20 into court for that purpose. Plaintiff had no insurances to prepare bills of quantities.

Mr. A. G. Thompson, confidential manager with the previous witness, said he saw defendant write the letter stating that providing plaintiff took full responsibility for the work not exceeding £1,250 he could go on with it, and he posted it himself. (This letter plaintiff declared he had not received.)

His Honour, in giving judgment, said he considered the case rather a hard one, but there had been no contract whatever. He thought that defendant was a little severe. The real bargain was that the work was to be carried out for £1,250,

and plaintiff said, in a sort of joking way no doubt, that he would do it for that. As a matter of fact, the sum did go beyond that amount, whereupon defendant said, "Off goes my contract." In his (the judge's) opinion, the specifications and bills of quantities were prepared in view of the larger contract. He gave judgment for defendant, but ordered the £20 (and costs) which had been paid into court by him to go to plaintiff for the work he had done, and awarded costs subsequent to the £20 to defendant.—(Condensed from "Cambridge Independent Press.")

WAR HUT CONTRACTS.

In the House of Commons on May 30, Mr. Ashley, Unionist member for Blackpool, raised several questions relating to war expenditure, and incidentally referred to the hutting contracts, which, he said, cost the country £7,000,000 or £8,000,000, and were done on the percentage of cost basis. This system, he declared, caused increased cost and inefficiency, and was also liable to create labour unrest. It was one of the cases of the unrest upon the Clyde.

Mr. H. W. Forster, replying for the Government, said that he shared in the dislike that had been expressed of the system of contracts on a basis of cost plus percentage of profit. Of outside contracts for huts, only three had been placed on that basis, and those three were for articles the cost of which could not be calculated. With regard to huts, it had to be remembered that in the first year of the war accommodation had to be built sufficient to have taken in the whole of the people of Manchester and Leeds. In the circumstances, the ordinary arrangement of fixed contract was absolutely impossible. They therefore called in to their aid the biggest building contractors in the country. It seemed the quickest, best, and—as far as they could see then, he was not sure that it had not been justified—the cheapest way. With regard to the profits of the contractors, he was negotiating now with the building contracting firms with a view to revising the rate per cent. which had been agreed upon, and until those negotiations had been brought to a close he would be glad if the House would not press him further. It was not the case that two new contracts had been entered into on the old basis. The department were proceeding to apply to this industry a system they had applied with very considerable success to other industries. They had power to requisition the whole output of a factory, and to call upon a manufacturer to produce his costings and then settle a fair rate of profit without basing it upon a percentage. Failing agreement they could go to a judge of the High Court.

CITY DEVELOPMENT.

The Liverpool City Engineer, Mr. J. A. Brodie, provided the half-hour luncheon talk at the Rotary Club on May 25, taking as his subject the question of the development of a city. He dealt with it from the point of view of Liverpool, and, having explained the various extensions of the boundaries which have taken place since 1835, alluded to the fact that many big development schemes have from time to time been talked about. Without going into them he, however, foreshadowed the possibility of Liverpool's connection with Birkenhead being extended by means of a

fine bridge or an additional tunnel, and explained the various extensions of the river frontage. Care should be taken to put upon it buildings that would be worthy of the city of Liverpool. When the area surrounding St. George's Hall was dealt with, care should also be taken to see that that was creditably dealt with, while it would be a fine thing if they could see the University extending down to Lime Street. Another magnificent opportunity for the architect offered itself in the neighbourhood of the Cathedral. He pointed out the impossibility, in the absence of joint action, of getting the best results for the expenditure of money in schemes which concerned more than one authority, and in this connection contrasted what was being done in some cities in America and Canada. Dealing next with the question of wide roads, Mr. Brodie urged that what was good enough for Liverpool forty years ago should not be good enough for the Liverpool of to-day, and they ought to see to it that the young people had suitable opportunities for obtaining exercise and fresh air. He believed they could find no better way of doing that than in the making of wide roads and the provision of recreation places. If they got 300 acres of ground in different parts they could be made centres for sport and, if they liked, centres for the training of boys under military instructors. If that were done he felt it would very soon clean up the slums of Liverpool.

NEWS ITEMS.

Boom in Factory Building.

Twenty new factories are to be erected at Tottenham to secure—it is asserted locally—German trade.

Curing a Damp Wall.

A very damp wall at the Mayor's house at Winchester gave considerable trouble to the corporation. Many remedies were tried with unsatisfactory results. Ultimately the chief sanitary inspector suggested a Pudloed cement rendering, and we understand that a permanently dry wall has been obtained.

Town Planning Scheme for Edinburgh.

At Edinburgh Town Council on May 24, Mr. Fraser moved the approval of a town planning scheme for the Craighentilly, Lochend, and Restalrig districts of Edinburgh. He said the area extended to 896 acres. Bailie Adams seconded, and the scheme, which is a tentative one, was approved.

Bo'ness Electricity Scheme.

Bo'ness Town Council have accepted the National Electric Construction Company's offer to carry out the modified scheme of extension of their electricity works for £12,000. Mr. J. M. M. Munro, consulting engineer, Edinburgh, has been engaged to supervise the extension for an inclusive fee of 210 gs.

French Honour for a British Architect

Major H. Phillips Fletcher, F.R.I.B.A., F.S.E. (partner in the firm of Banister Fletcher and Sons), of the Middlesex Hussars, has returned to England on being seconded to the Royal Flying Corps. The major had been attached to the French Navy as commandant of the British Military Observers, who were flying with French pilots in the East. He was awarded the Croix de Guerre in August last for reconnaissances under fire for the

first time, and before leaving the French squadron received it again on two further occasions, once more for work with the Navy and once with the French Army. This entitles him to wear palm leaves and two stars on the riband of the order. He is the only British officer thus decorated.

A Good Case for Exemption.

Before the Hawarden Tribunal, a builder, of Saltney, aged twenty-eight and married, asked for exemption. He stated that if he did not get exemption the business would have to close down, which would mean financial ruin. He had contracts to complete, and employed nine men. He only asked time to settle his business matters; he did not wish to shirk. Four months' temporary exemption was granted.

New Buildings for Romford District.

Romford Rural District Council has approved the following plans: Shed for nitric acid towers at Chemical Works, Chequers Lane, Dagenham, for the Nitrogen Products and Carbide Co., Ltd.; bungalow in Nags Head Lane, Upminster, for Mr. H. M. Gotobed; addition to offices at the Sterling Works, Dagenham, for the Sterling Telephone and Electric Co., Ltd.; motor garage at Malvern, Hall Lane, Upminster, for Messrs. W. P. Griggs and Co., Ltd.; and temporary school chapel in Warley Road, Great Warley, for the trustees of the Primitive Methodist Church.

Road Works and Housing at Coventry.

The following works are under consideration by Coventry City Council: General Works Committee's recommendations: (1) That road works be carried out in Holbrooks Lane, consisting of the construction of a footpath 17 ft. wide on the east side of the lane, and a carriage-way 22 ft. wide adjoining, at an estimated cost of £2,330, of which one-half will be contributed by the Minister of Munitions and the other half lent free of interest by the Minister of Munitions to the Corporation, and repayable by five equal annual instalments, and that application be made to the Local Government Board for sanction to the loan. (2) That the arrangements now submitted with respect to an improvement in Abbotts Lane, opposite land belonging to Mr. William Clarke, at a cost of £47, be approved. Housing Committee's recommendation: That, subject to the approval of the Local Government Board and the Ministry of Munitions, the scheme for the erection of workmen's houses at Stoke Heath be altered so as to make provision for 10 shops and 599 houses instead of 600 houses only.

Spire of St. Mary's, Leicester, Condemned.

About forty feet of the top of the graceful spire of St. Mary's Church, Leicester, has been condemned as unsafe, and it will be necessary either to remove that portion, leaving it flat, or else rebuild it. The old spire was struck by lightning in 1783, and was re-built in the same style. The Church of St. Mary is one of the most beautiful in the town, and has features of great interest not only to antiquarians, but to students of ecclesiastical architecture. The architects, Messrs. Seal and Riley, estimate that it will cost £100 to remove the unsafe part of the spire and "cap" it. To repair and restore it another £500 would be required. New Weldon stone would have to be used for the purpose, the present masonry being very much dilapidated and worn. A meeting of the

Church Council was to be held to discuss what should be done—whether the unsafe part of the spire should be removed and "capped" until a more favourable time arrives, or whether the work of complete restoration should be undertaken without undue delay.

Scottish Veterans' Garden City Association.

At a meeting of the Scottish Veterans' Garden City Association, held in the offices of the association, George Street, Edinburgh, Mr. Alexander Sim presiding, the Secretary (Councillor J. F. Robertson) reported that committees had been formed in various parts of the country. A financial statement was submitted, which showed that a sum of over £600 had been subscribed or promised for the Longniddry scheme, while the outlays for printing, advertising, postage, etc., to date amounted to £444 2s. 3d. Several thousand pounds had also been raised by county committees. Lord Dean of Guild Henry submitted plans of the first section proposed to be erected at Longniddry. He stated that it was intended to proceed meantime only with a part of the scheme. About twenty cottages with shops and workshops were contemplated. It was resolved to advertise for estimates. A committee consisting of the Hon. Lord Salvesen, Sir Henry Ballantyne, and Messrs. G. A. Connor and A. Horburgh Campbell, burgh engineer, and the chairman, who were present, was appointed with power to adjust certain details in the plans. Sir Henry Ballantyne, Mr. Connor, and Bailie Wright reported regarding the progress of their county committees. The Perth Branch, which has raised over £3,000, is at present considering the selection of a site.

OBITUARY.

Mr. William Leiper, R.S.A.

The death is announced of the well-known Scottish architect Mr. William Leiper, R.S.A., F.R.I.B.A., of Glasgow. Mr. Leiper was seventy-seven. He was born and educated in Glasgow, and was trained in the office of Messrs. Boucher and Cousland, and afterwards received tuition under Mr. J. L. Pearson, R.A., and Mr. William White, F.S.A. Among the public buildings designed by him are Dumbarton Town Hall and Academy and Partick Burgh Hall. He also designed the scheme of decorations for the Banqueting Hall of the City Chambers, Glasgow. Other notable examples of his work in that city are the carpet factory of Messrs. Templeton at Glasgow Green and the Sun Fire Insurance Offices at the corner of Renfield Street and West George Street. An important commission which he fulfilled was the decorative scheme for the Czar's Imperial yacht "Livadia." He enjoyed a wide experience in domestic architecture, a large number of mansion houses at various places in Dumbartonshire, Renfrewshire, Lanarkshire, and Perthshire being built to his designs. Mr. Leiper was well known in art circles. He was attracted to landscape painting, and studied in Paris. On several occasions he exhibited canvases at the Royal Glasgow Institute and the Scottish Academy. He was elected an Associate of the Royal Scottish Academy in 1891 and a Royal Scottish Academician in 1896. In 1881 he became a Fellow of the Royal Institute of British Architects.

THE REBUILDING OF SACKVILLE STREET, DUBLIN.

The A.A. of Ireland and the Problem.

Mr. H. G. Leask, president, occupied the chair at the final meeting of the session 1915-16 of the Architectural Association of Ireland, held at the rooms, South Frederick Lane, Dublin.

The annual report mentioned that, despite many difficulties, the work of the Association had been carried on successfully during the session. The total number of members was now 115, an increase of five over last session. The committee had adopted a resolution to the effect that all members serving in His Majesty's forces should be exempt from payment of subscriptions for the current session, and in view of the prevailing conditions consequent upon the war, it was decided that the officers and committee should retain office during the coming session. It was also mentioned in the report that twenty-one members were now on active service.

The President, referring to the problem of rebuilding Sackville Street, said the deplorable destruction of property in that area had produced a unique opportunity for the construction on lines worthy of the dimensions of the street of stately and harmoniously designed buildings in place of the previously existing miscellaneous and characterless frontages. That this opportunity should be due to catastrophe was greatly to be regretted; but, architecturally speaking, the old frontages were no loss to the amenities of the city, and it was to be hoped that the schemes already in train for the harmonious treatment of the street would come to full fruition. It was not necessary to say that Dublin architects—proud of the older glories of the city in the Georgian period—were ready and keen to assist the authorities towards these desirable results. The President also announced in connection with the work of the Association, that what they should be most proud of was the fact that 20 per cent. of the members of the Association were serving with the military forces of the Empire.

The following prizes were awarded: Class design, Mr. Stephen S. Kelly; Institute prize, Mr. W. S. Keatinge; Vice-President's prize, Mr. Stephen S. Kelly; Downes bronze medal and prize of two guineas, Mr. W. A. Dixon.

The Question of Compensation.

A meeting of property owners in the parts of the city devastated through the recent revolt, and who were not fully insured, was held in the Mansion House, Dublin, on May 24, for the purpose of taking all necessary steps to place before the Government the actual facts of the situation as affecting their interests. The meeting was convened by Mr. Patrick White, M.P., and Mr. Lorcan Sherlock, T.C., and was the outcome of what was described in the circular as "the very unsatisfactory statement of Sir Robert Chalmers with reference to persons who were not fully insured." There was a large attendance.

Mr. White, M.P., proposed a resolution requesting the members of Parliament for Dublin City and County to arrange for an interview with the Prime Minister to receive a deputation from the sufferers from the recent fire. The basis of insurance, Mr. White said, was an impossible one to lay down, for it was the bounden duty of the State to replace the property up to the actual cost of restora-

tion. If Sir Robert Chalmers and the Government were to settle the question on this basis of insurance then they were divorcing the Government from the elementary principles of right and justice.

The resolution was carried.

The General Question.

Mr. R. M. Butler, F.R.I.B.A., of Dublin, writes:

The announcement by a firm of house agents in Dublin of the sale by them of a site in Sackville Street calls attention to the urgent need for definite and prompt action by the Government. If some clear scheme for rebuilding the Sackville Street area is not formulated at once it may be too late, and the result will be deplorable. The principle of compensation by the State has been accepted, and the need for control is plain. The Corporation of Dublin and those who have interested themselves in the matter have no voice or authority to interfere with design. Such influence can be exercised only by the State, which is providing the funds.

If the State provides the money to rebuild a section of the city, it is in duty bound to see that it is wisely expended. This naturally implies rebuilding in a dignified and suitable manner. To accomplish this, two things seem to be essential; first, that the State should acquire absolute ownership of the entire area involved. If this is not done the difficulties of boundaries, party-walls, and the extraordinarily involved and complicated features of the Irish leasehold system will prove insuperable difficulties in the way of a fine scheme. The extra cost of acquiring the ownership would be recouped in ground-rents and increased rateable value. . . .

As to the best method of control, it would seem to me that the reconstitution of some such body as the Wide Streets Commissioners, who did such excellent town-planning work in Dublin during the eighteenth century, acting in conjunction with a "committee of taste," comprising architects, artists, and experienced men of business, affords the best chance of success. The results would, I am sure, fully repay the trouble, and allow this great opportunity, almost unique in the history of cities, to be availed of in a fitting manner, enabling Lower Sackville Street to be lined with a noble range of buildings, forming the nucleus of a greater scheme in the future. In considering this whole question, it should be remembered that Dublin is not a mean provincial town or merely the metropolis of Ireland, but by long tradition, and in dignity of aspect and environment, the second city of the Empire.

Some Practical Suggestions.

Mr. James Ward, Headmaster of the Metropolitan School of Art, Dublin, writes as follows to the Dublin "Daily Express":

If Dublin, or at least Sackville Street, is to arise in beauty from the ashes of its recent fires, it will appear quite plain to its citizens that before any serious rebuilding of the destroyed portion is attempted a well-thought-out architectural scheme, embracing the general plan and elevations, must be approved by a committee consisting, say, of members appointed by the City Council and by the Government, and having also a number of well-known architects who would be able to give expert advice to the general committee. . . .

Such a committee, after coming to an agreement as to the general outlines of the frontage and extent of ground areas avail-

able, or to be acquired, might consider designs and drawings from experts showing suggested schemes for the general rebuilding of the present destroyed area. If I may be permitted, I would suggest that such preliminary designs, which need not be worked out in complete architectural detail, should broadly indicate the main features of the frontage elevations, and above all the roof silhouette or sky-line. The latter point is of extreme importance, for one building should not unduly tower in height, like a "sky-scraper," above its neighbour, nor should the general sky-line be of a level monotony. A certain amount of symmetry, even in the heights of city buildings, will produce an effect of dignity and repose, but, for artistic reasons, it should not be of a dry symmetry either in the façades or sky-line.

The Lord Mayor, I understand, favours the formation of a circus planned frontage, where Nelson's Column would form the central point. This, I think, is an admirable suggestion. It might, however, be suggested that another good plan, provided the Dublin Corporation are granted powers to acquire sufficient ground and property, would be to rebuild Sackville Street so that the frontage lines of the buildings on both sides would take the form of a wide ellipse, or something approximating that shape, whose foci would be the Nelson Pillar at the upper end, and the O'Connell Monument at the lower. It may be mentioned that if an elliptical plan of frontage be adopted the columns and front of the Post Office should be taken down and set back about ten or fifteen feet from their present position, and to make good this depth of space the building could, if necessary, be extended at the rear.

One presumes that the present exterior shell of the General Post Office will be preserved in whatever scheme of rebuilding is adopted. In that case it might be suggested that a similar building of say, a Classic or Neo-Classic order, should be erected opposite, on the other side of Sackville Street, to balance the Post Office building. This proposed new building might be used for the double purpose, viz., as the new home for the Royal Hibernian Academy, and also possibly provide accommodation for the needs of a Municipal Gallery of Modern Art. It is evident that a new building will be required for the Hibernian Academy of Art, seeing that the old building has been destroyed by fire, and the new Academy certainly ought to be erected in Sackville Street, or in some other more important place than where it has been almost hidden for so many years past. Seeing that almost every provincial town in England and Scotland, and every town on the Continent, have their Municipal Galleries of Modern Art, many of which are fine architectural constructions, it is surely time that the capital of Ireland should be provided with a more suitable building than a private house in which to display its treasures of modern pictures and sculpture. The reconstruction of Sackville Street, Mr. Ward adds, offers an excellent opportunity for the architects, the Corporation, and the Government, to add to the number of existing beautiful buildings which Dublin fortunately possesses. Though there may be a certain freedom permitted to architects in the exercise of originality and individuality, one might suggest that the keynote of the new designs should be found in the traditional style adopted by Gandon and others in the past century.

TRADE AND CRAFT.

Electric Heating.

In the following article, a correspondent who is keenly interested in the promotion of electric heating suggests that its general adoption would make chimneys and fireplaces unnecessary. For that somewhat daring proposition the responsibility must rest with the writer.

The influence of the chimney upon architectural design provides an interesting study. More than one style is derived from countries where fires and chimneys were unnecessary; and when these styles are adopted in northern climes the addition of chimney-heads may have a deplorable effect upon that sense of unity which is, or should be, the aim of the designer. In any case the freedom of planning a building is very much restricted by the necessity of providing each apartment with a flue at the strategical point for the deployment of heat. Every plan is in the nature of a compromise; and the flue complicates the situation by reducing the useful area of floor-space, by necessitating the bunching of chimneys to reduce expense in construction, and by breaking the line of walls. The sky-line might lose a little in variety if chimneys were omitted, but in every other respect the architect might be glad to simplify his work by leaving chimneys out of account.

This is an aspect of design which is certainly worth consideration, because there is a reasonable prospect that the open fire will not be the heating method of the future. The Englishman's love of the living flame and his joy in banging coal with a poker, may give the coal fire an additional lease of life, and may even confer immortality upon it as a luxury. But the trend in domestic life is towards the saving of labour, and as the difficulty of obtaining satisfactory domestic service becomes more acute we may possibly see an extension of the system of central heating. We may or may not follow the Americans in doing away with the domestic furnace by taking steam direct from public mains connected with electric generating stations, but in our variable climate we are certain to want some convenient form of local heating to provide occasional warmth during weather which is not cold enough for steam heat, and also to supplement, in extremely cold weather, the warmth afforded by steam heat gauged for moderately low temperatures. In houses not provided with central heating, the same need for an intermittent source of heat is felt. In bedrooms, bathrooms, morning-rooms, and other apartments which are occupied for limited periods at long intervals, the coal fire is of no use. What is needed is a rapid method of raising the temperature of the air to the level of comfort.

The electric fire is the only way of doing this which does not involve a flue, as it is the only method of producing heat without emitting products of combustion. Moreover, it is the only portable form of fire. One's first inclination is to put an electric fire in the old fireplace. It is difficult to imagine heat coming from any other source. But after due acquaintance with the portability of the electric fire, the apparatus is generally brought out into the room close to chairs on which people are sitting, or even under the tables at which they are breakfasting or writing. Thus, in place of a mantel (and sometimes an overmantel), a grate, a fender, a coal-scuttle, and a collection of fire-irons, you have simply a piece of apparatus weighing

a few pounds and measuring about a foot wide and a foot and a half high. Compared with a coal fire and its accessories, the electric fire is an insignificant detail, requiring no more consideration from the æsthetic standpoint than the choice of a style in brass, bronze, copper, or iron, to suit the other furniture of the room.

The later types of electric fire are so much more efficient and attractive than the old, that they have, in conjunction with reduced prices for electricity used in domestic heating, led to an increasing popularity for electric heating. When the war is over, the cost of electricity is certain to decrease. The expense of an electric fire is, of course, trifling compared with that of a flue and the other essential parts of a coal fire. Indeed, it may be safely reckoned that a house could be fully equipped with electrical apparatus for lighting, heating, cooking, and the driving of domestic apparatus, such as vacuum cleaners, dish-washers, washing machines, plate polishers, boot polishers, and serving machines with the money saved on construction and equipment for heating by open fires. A system of air ducts could be arranged more cheaply and more scientifically than by constructing chimneys for coal fires.

Industrial Illumination.

It has long seemed an anomaly that the Factory Acts of the United Kingdom contain no general provisions with regard to illumination supplementary to those laid down for heating and ventilation, although the codes of all the chief European countries, the United States, and India include such requirements, and the result of the enquiry by the Departmental Committee appointed to investigate the subject has been to make clear the necessity for some legislation on the matter.

The effects of bad illumination may be summed up as follows: A prevalence of accidents, damage to eyesight and health from eyestrain, headaches, etc., encouragement of insanitary conditions, and the depreciation of plant by the unnoticed accumulation of dirt, diminished output of work owing to physical and psychological results of poor lighting on the worker, and lack of discipline. All these points have been thoroughly substantiated in the enquiry.

The evidence taken makes it obvious that there is a general consensus of opinion as to the economic and hygienic advantages of adequate and suitable lighting, and this is supported by the fact that of late years there has been considerable improvement in the illumination of factories and workshops. Many employers, however, are still behind the times, and therefore Government requirements which would bring these firms into line with their more progressive contemporaries would be highly beneficial.

The Committee accordingly recommend that there should be a statutory provision requiring adequate and suitable lighting in every part of a factory or workshop, and giving power to the Secretary of State to make orders defining such illumination, which should comply with the following requirements: (a) Adequacy, (b) constancy and uniformity, (c) proper placing and shading, and (d) absence of extraneous shadows on the work. "Adequate illumination" is further specified, measured on a horizontal plane at floor level, (1) for the working areas of workshops as not less than 0.25 foot-candles; (2) for all working and passage areas of foundries as not less than 0.4 foot-candles; (3) for all parts of factories and workshops

(not included in (1)) over which persons are liable to pass, as not less than 0.1 foot-candles; and (4) in all open places in which persons are employed after dark, and in all dangerous parts of roads or other approaches, as not less than 0.05 foot-candles. It may perhaps be well to explain that a foot-candle is the illumination produced by a standard candle at a point one foot distant from the source.

It should be pointed out that in these recommendations, which, of course, have no reference to the special illumination necessary for the actual carrying out of the work, the minimum values prescribed are lower than those found to exist in the majority of factories visited. It will therefore be no hardship for any manufacturer to comply with the regulations when they come into force. The report, however, makes no suggestions as to the means whereby the desirable ends are to be attained, and it is left to the manufacturer's own discretion as to what form of lighting or what modification of existing arrangements he will introduce.

This is a matter requiring careful forethought and expert advice. There are to-day only two agents of illumination which can really claim attention—incandescent gas and electricity. The choice between these two should be regulated by three factors—hygiene, economy, and convenience. Hygiene can be subdivided into (a) the effect on the atmosphere, and (b) the effect on the eyesight. With regard to this first point the following words, used by the late Professor Vivian B. Lewes, F.I.C., F.C.S., in the theatre of the Royal Dublin Society, afford important testimony. Speaking of the inherent ventilating qualities of gas, the heat from which dispenses and oxidises the organic vapours given off from the skin and lungs, and thus prevents a room from becoming stuffy, he said: "It has not unnaturally been assumed that, owing to incandescent electric lighting adding nothing to the impurities in the atmosphere and—what is quite as important—withdrawing no oxygen from it, it must be the most hygienic form of illumination to employ, but in the years which have elapsed since electricity was pressed into the service of man for illuminating purposes it has become perfectly clear that, though electricity is inactive as regards vitiation of the atmosphere, a gas-lighted room will nearly always be more pleasant and healthy to live in than one lighted by the newer form of illuminant. . . . An interesting series of experiments which I have made shows conclusively that taking an ordinary dwelling-room lighted by gas and then the same room lighted by electricity, the air of the lower portion of the room, if one or two people only are present, is as pure with gas lighting as with electric lighting, while if a large number are present the advantages are enormously in favour of gas—the air with electric lighting becoming rapidly so organically impure as to be positively dangerous to health."

With regard to the effect on the eyesight, the question of proper placing and shading is of equal importance to both forms of lighting, but it is claimed by the advocates of gas-light that this illuminant has the advantage as being in its composition the more closely akin to actual daylight. They claim also that while gas is cheaper than electricity, the latter is no longer uncontestedly superior in the matter of convenience. For some time, it is admitted, electricity carried off the palm in this respect, but to-day the system of by-passes and local control has brought the two illuminants level in this respect.

PROPOSED CONSOLIDATION OF LONDON ACTS.

The Parliamentary Committee of the London County Council have had under consideration a letter from Mr. Albert Gray, K.C., the counsel to the chairman of the Committee of the House of Lords, suggesting that, having regard to the fact that the Council is not promoting any Bills in Parliament this year (other than the Money Bill) and to the probability that during the next subsequent years local legislation may remain in partial abeyance, the opportunity should be taken to effect some consolidation of the London Acts.

The volume and complexity of the law relating to the government of London are at present very great, and are being added to every year to such an extent that in the near future the position must become so difficult, not only for those directly concerned in London local government but also for the public generally, that it appears that something will have to be done to simplify the matter. The longer the matter is postponed the greater will become the task.

On February 4, 1902, the Council authorised the printing and publication in book form of the public and private Acts of Parliament relating to the work of the Council. Under this authority two volumes collating the public and private statutes (excluding railway, gas, dock, canal, and similar private Acts) specially affecting London from the year 1750 to the end of the Parliamentary session of 1907, were published in 1907. The Acts so collated number 386, and since 1907 fifty or sixty Acts affecting London have been passed. The Acts which have been collated comprise only public Acts relating specially to London and the private Acts affecting the powers and duties of the Council, but we understand that taking as a basis the chronological table at the beginning of the volumes before referred to, the Acts or parts of Acts relating specially to London which are still on the statute book number about 2,500.

The law of London government may be roughly classified as follows:

(1) Metropolis Management Act, 1855, and some eleven amending Acts; (2) Metropolis Paving Act, 1817 (commonly known as "Michael Angelo Taylor's Act"); (3) Some ten Metropolitan Board of Works Acts; (4) Valuation (Metropolis) Acts, 1869 and 1884, and the London (Equalisation of Rates) Act, 1894; (5) Some eight Metropolitan Poor Law Acts dating from 1864; (6) Metropolitan Fire Brigade Act, 1865, and amending enactments; (7) Metropolitan Subway Act, 1868, and London County Council (Subways) Act, 1893; (8) Public Health (London) Act, 1891, and amending enactments; (9) Twenty-five London County Council (General Powers) Acts and also certain other private Acts of the Council of a general character; (10) London Building Act, 1894, and amending enactments; (11) London Government Act, 1899; (12) A number of miscellaneous Acts, such as the London Overhead Wires Act, 1891, Canals Protection (London) Act, 1898, London County Council Electors Qualification Act, 1900, Labour Bureaux (London) Act, 1902, Education (London) Act, 1903, and other public and private Acts; (13) A large number of Acts relating to parks, commons, and open spaces; (14) A large number of Acts relating to bridges, embankments, tramways, street improvements, tunnels, and other works; (15) Several Police Acts and Hackney Carriage

Acts; (16) A number of Acts specially relating to the City of London and principally administered by the City Corporation; (17) A large number of Acts relating to water, gas, electric supply, railways, docks, the Port of London, canals, markets.

The desirability of consolidation has been recognised, not only in the cases of the special legislation affecting Leeds, Plymouth, and Bury, but also in a considerable number of public Acts passed in recent sessions. As an indication of the increased importance attached to this subject by the legislature, we may mention that for the last few years a joint select committee of both Houses has been appointed sessionally to deal solely with public consolidation Bills. The chairman of that committee has hitherto been Lord Loreburn, a former Lord Chancellor, who has taken a special interest in the matter. As an instance of the favour with which he, when Lord Chancellor, viewed this class of legislation may be quoted one of his observations when moving the second reading of the Licensing (Consolidation) Bill in the House of Lords on July 26, 1910. He said: "I hope that your lordships will give your consent to this Bill, and that its success may encourage other private members to do the same good work which has been done by a private member on this occasion—namely, to put the tangle of our statutes into something like ordinary shape, and thereby enable people to understand what the law is."

In the opinion of the committee there can be no question that it is extremely desirable that the statute law relating to London should be consolidated, and there is no likelihood of the work being carried out unless it is done by the Council. Mr. Gray lays emphasis upon the Metropolis Management Acts as containing the provisions most in need of consolidation, and in this opinion we agree. The earliest of the Metropolis Management Acts was passed in 1855, and there have been some eleven amending Acts. They are public Acts, and the committee are advised that if drafted in modern form they could be materially shortened and simplified. More than three-fifths of their provisions have already been repealed or are spent, and a considerable number which are still operative could be got rid of in a measure of consolidation. The Acts have been amended to some extent by the Council's General Powers Acts and by the London Government Act, 1899, and these latter Acts should, in part at any rate, be dealt with in any consolidation of the Management Acts. It would also be desirable that a number of the general powers contained in the Metropolitan Board of Works (Various Powers) Acts and the London County Council (General Powers) Acts should be dealt with in the consolidating Bill. Mr. Gray states that there would be no objection to a Bill for the consolidation of these Acts and cognate provisions in other Acts being introduced as a public Bill, but adds that the Committee on Consolidation Bills, to which the Bill if a public Bill would in the usual course be referred, would require to be satisfied that the Bill was a consolidating measure and did not alter the law in any material respect. The only expenditure involved, apart from the salaries of the permanent staff, would during the current year be the cost of any printing, which would be trivial. It might be found to be necessary to have the assistance of counsel in settling doubtful points in the draft Bill. The General Purposes Committee agree as to these proposals.

LONDON COUNTY COUNCIL AND CHARING CROSS BRIDGE.

The Parliamentary Committee of the London County Council have placed the following statement on the agenda:—

The Council on April 18, 1916, instructed the Parliamentary Committee to oppose the South-Eastern and London, Chatham, and Dover Railways Bill, 1916, with the object of securing the rejection of the power relating to Charing Cross bridge.

The Committee reported on April 18, 1916, that a petition had been lodged in the House of Lords, but that this petition dealt only with the protection of the Council's interests affected by the Bill. In view, however, of the instruction of the Council it was necessary to obtain permission to lodge a further petition to the House of Lords. Lord Peel moved the suspension of the standing orders to enable this to be done, and the motion was agreed to. A petition against preamble was accordingly lodged.

This Bill came before the Marquis of Bristol's Committee in the House of Lords on May 19 and occupied four days in the hearing. The Council was represented by Mr. G. M. Freeman, K.C.

Evidence was given by the company's engineer to the effect that for many years the company had had some misgivings as to the strength of the bridge to carry the ever-increasing weight of the modern engines, and that in 1906 it came to the conclusion that it was necessary to place a restriction upon the working of the bridge in order to relieve the strain and so keep a proper margin of safety for the travelling public. This restriction necessitated that only two roads out of the four should be used at one time, and that these two should be alternate and not adjacent roads. The company consequently lost 50 per cent. of the use of the bridge. The necessity for strengthening the bridge was supported by Mr. C. L. Morgan and Mr. Basil Mott, engineers. Sir Francis Dent, General Manager of the company, urged the necessity for further accommodation at Charing Cross Station, which could only be secured by strengthening the bridge.

The Associated Gas Companies strongly opposed the Bill on the ground that the proposed arches would greatly increase the danger of navigation under the bridge, which, owing to the bend in the river, was difficult at this point.

The Chairman of the Improvements Committee, Mr. Andrew T. Taylor, gave evidence, on behalf of the Council, against the proposals contained in the Bill. Sir Lionel Earle, Secretary to His Majesty's Commissioners of Works, also gave evidence, which was to the effect that the question of altering the bridge should be postponed until after the war, on the ground that Charing Cross Station was very confined and that the great increase of traffic to the Continent after the war would render further accommodation necessary, more especially as the Channel Tunnel would probably be constructed after the war. He also stated that he had hopes that this spot might be the site of a magnificent war memorial in the shape of a fine bridge to the memory of those who had fallen. The Right Hon. John Burns, Sir William Lever, and Sir Aston Webb also gave evidence against the proposal. The Committee found the preamble of the Bill proved.

The Improvements Committee have suggested that the opposition should be renewed in the House of Commons, and the Parliamentary Committee have given instructions for a petition to be lodged.

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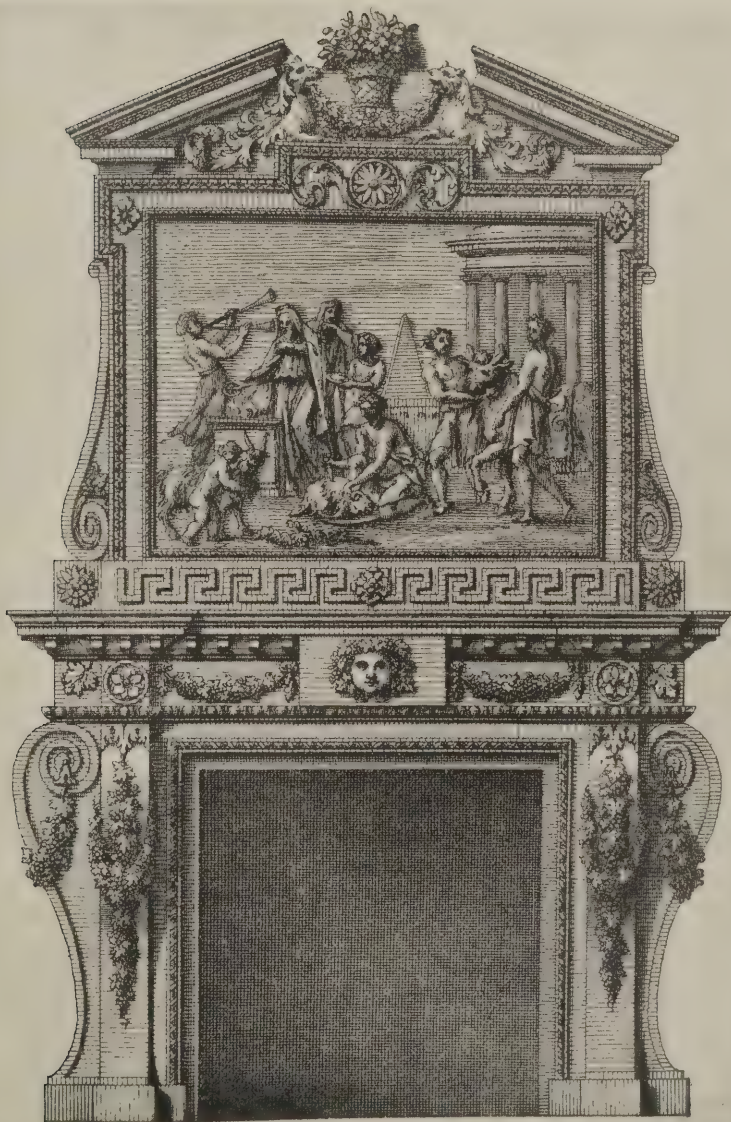
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VOLUME 43. No. 1119.

EDITORIAL.

WE are glad to publish in full the very interesting report that has just been issued upon the work of the Architectural Association War Service Bureau. It is a proud record, modestly expressed. Mere figures cannot do justice even to the extent of the work, and its character and influence must always remain largely a matter of inference. Started promptly within a few days of the outbreak of the war, the Bureau speedily assumed extraordinary importance as a recruiting agency of very special character. It encouraged recruiting not merely by urging service as a patriotic duty, but by doing everything possible to make the duty easy and pleasant—terms that, in face of the present strenuousness, may seem paltry, but that nevertheless had considerable force in the early days when the magnitude of the occasion had been but faintly realised, and when young men who were anxious to serve their country were in great need of guidance as to the best way to set about it.

* * * *

At that time we were not, in practice—though events have proved that we were so in spirit—a military nation; and the Bureau did really fine work in smoothing the way to enlistment. First and last, the Bureau must have effected a very considerable economy of effort and material. Not only did it dissipate the misgivings of the doubters by its ability to introduce them to suitable units, in which they would find congenial comrades-in-arms, but in this and in other ways it did the State some service by securing, as far as possible, that the men would get the work for which they were best fitted. Thus the recruit was gratified and his value to the country considerably increased; or, rather, his special aptitude was much less likely to be overlooked, the Bureau ascertaining it, and knowing in what direction it was required. Without disparagement to other agencies, it may be said that the A.A. Bureau differs from the ordinary type of recruiting agency in being so much more highly organised: hence its extraordinary success, which, however, owes much to the splendid energy of its promoters, who have worked so untiringly and so ungrudgingly in the interests of the country and of the recruits. Mr. Alan Potter, who was virtually the founder of the Bureau, and Mr. F. R. Yerbury, who succeeded him as secretary, have earned the grateful recognition that is due to the loyal and self-sacrificing service which is contagious and effectual.

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We print on a later page a selection from the almost multitudinous views which are appearing in the Press with respect to the rebuilding of the devastated area

in Dublin. A letter from the President of the R.I.B.A. counsels due deliberation and care in the preparation of an ordered and considered scheme, and an avoidance of the line of least resistance. Archbishop Walsh suggests that the occasion should be seized for securing a suitable site for a cathedral. He does not contemplate immediate building of this cathedral in these times of stress, but thinks that the site might be held in trust as a public garden. This is no doubt an admirable scheme in itself, but it complicates the problem. So also, in a different way, does the proposal by Mr. Bradshaw to remove the old church of St. Thomas—such a suggestion almost invites opposition. Then, again, the Dublin Fire and Property Losses Association does but little to help matters by its rather defiant declaration of rights. It threatens to oppose any general architectural scheme that seems at all likely to subject owners "to any delay whatever in starting and completing building operations"; and it claims, under the same threat, that "the business men interested must be satisfied that the architectural features of each building shall be such as will be most suitable for each trader, in carrying on his own business according to his experience and requirements"; which is in effect a demand that chaos shall come again.

* * * *

This attitude of the traders was to be expected, and that it should have been promptly and explicitly adopted is rather an advantage. Forewarned is forearmed. Experience in the Regent Street Quadrant case suggests the wisdom—to say nothing of the mere humanity—of giving a full measure of sympathetic consideration to the views of the traders. It would be poor policy as well as bad manners to attempt to drag them into the acceptance of architectural dogma. As we contended in the Regent Quadrant controversy, it is for the architect to ascertain the traders' requirements and to give them architectural expression—to draw rather than to drive, to exhort and persuade rather than to assume the demeanour of Sir Oracle. A preliminary step should be to convene a joint meeting, or series of meetings, of representatives of the various interests, at which there can be a free interchange of opinions. It cannot be supposed that there would be much rapid conversion on either side; but, at least, something would be learned by all parties, and it is almost certain that some of the more formidable difficulties would disappear, and mutual respect would be more likely than bitter antagonism to result from the better understanding that almost always attends straight talk at a face-to-face conference. Architects and traders, as we have repeatedly insisted, have much to learn from each other; and here is an excellent opportunity for advancing their education.

A suggestion by Mr. Bradshaw that temporary accommodation in Edward Street might result in the automatic aggrandisement of that street as a centre of business happens to coincide with an opinion expressed to us privately by an architect who has given considerable attention to the problem. He thinks—not as a politician, but as an architect—that, with the advent of Home Rule for Ireland, Sackville Street should be made the great administrative headquarters of the city—that it should be mainly or wholly occupied by dignified Government buildings, the shopping centre being shifted to Edward Street or elsewhere. This arrangement, although it might solve the architectural problem very satisfactorily so far as Sackville Street is concerned, merely evades the question of adapting architecture to business needs or opinions, and it is to be feared that at the present juncture our friend's scheme has but little chance of materialising. It is, however, an alluring suggestion, and we therefore pass it on. Nor should it be forgotten that, as we have previously mentioned, there are in actual existence several competitive schemes that, separately or collectively, would probably meet the case.

* * * *

In the multitude of counsellors there is wisdom; but always the difficulty is to extract the pure metal from the ore, and it is to be feared that in the process of settling the Dublin problem there may occur a certain amount of crushing as well as clashing of interests. Two prominent dangers of the situation are that the authorities, overwhelmed with advice, may either reject it holus-bolus, the good with the bad, or arrive at some weak compromise that will leave everybody profoundly dissatisfied. Neither catastrophe need occur if architectural opinion is allowed due weight, always providing that architectural opinion shall not austere and ostentatiously repudiate the business view, which should be turned to architectural issues. That, however, is a question of detail. Prior to it comes the broad principle which the architects are asserting with necessary force and persistency. It is expressed in the resolution adopted by the Royal Institute of Architects of Ireland on June 5th—"That the Government should embody in any new Bill dealing with the rebuilding power to acquire in the Sackville Street area all the sites of the destroyed property, and where necessary those of the premises adjoining, and to redistribute these sites, define the boundaries, and control the designs." Without this power of central control—which, of course, would not necessarily be directly exercised by the Government, but would be judiciously delegated to some properly constituted authority on which architectural opinion would be adequately represented—there could be no hope that the rebuilding of Dublin would be exemplary of anything but the unwisdom of ignoring the first principles of civic design, and the rebuilding would be, in a sense, as deplorable a misfortune as the destruction. We trust, therefore, that the Irish architectural organisations will press this point with the utmost vigour and persistency, and that they will receive the fullest possible support from the entire profession.

* * * *

Land questions seem to be strongly provocative of sardonic humour. A correspondent signing himself "Landless," whose letter appears under "Correspondence" this week, suggests one of those delightful short cuts which are always forbidden us. The land should be everybody's and nobody's: then there could be no nonsense about rights of transfer. This scheme would involve a certain amount of displacement, but those who are dispossessed should receive adequate compensation for disturbance—"by being referred

back to their long and peaceful but unjust enjoyment of portions of the universal crust." This is a thoughtful, sympathetic, and almost poetical ("crust" rhyming with "just," although the metre halts) provision for a contingency that would be but little likely to arise. After digesting this letter, the most hardened landholder will be convinced of sin, and will hasten to quit. Our correspondent shows similar tender forethought for the lawyers. When the land is disencumbered of Acts and Deeds the lawyers will be without occupation, beneficial or otherwise. There will be no further use for them, even as purveyors of "tautological verbosity." Writers in the technical journals, our correspondent seems to hint darkly, could be depended upon to meet the demand for inflated jargon. Lawyers, then, should be set alight with their Deeds. An appropriate comment would be the death-bed observation of Mr. Labouchere, who, when the napery caught fire, observed, "Flames? Not yet, I think." Although we recognise the intrinsic value of our correspondent's contribution to a burning question, we fear that he perhaps carries simplification a little too far. And that reference to "tautological verbosity" sticks in our throats.

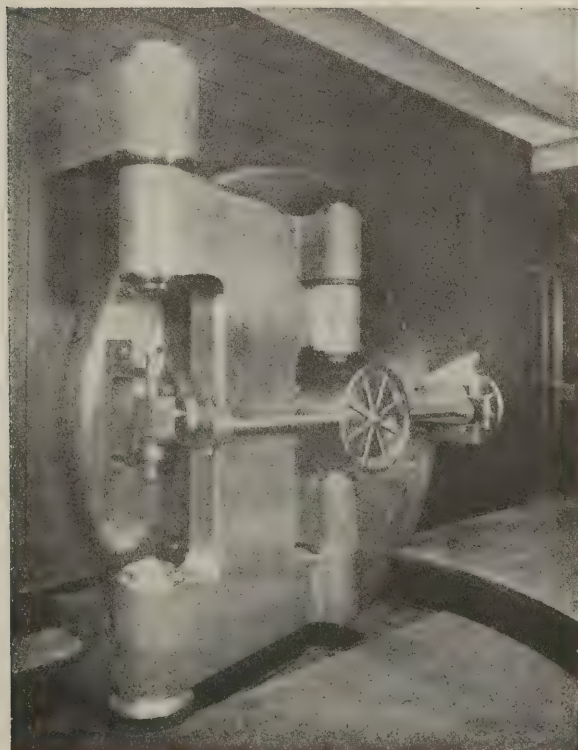
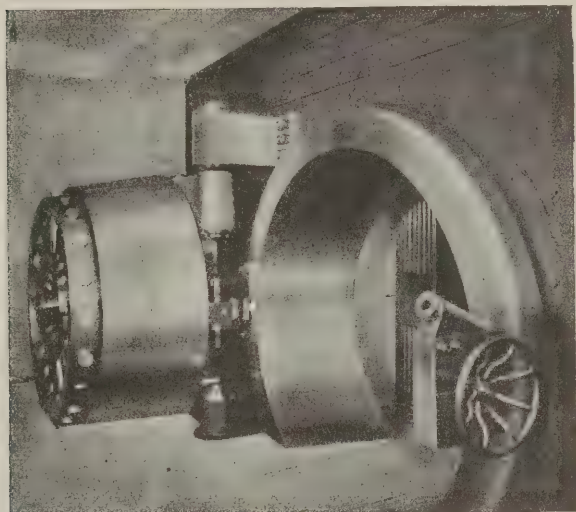
THE KING'S MEWS AT CHARING CROSS.

A MOST interesting and valuable article on the King's Mews at Charing Cross appears in the "Architectural Review" for June. The author, Mr. Arthur Stratton, F.S.A., F.R.I.B.A., traces the history of the site from the days of Charing Village down to the nineteenth century. He elucidates how the word "mews" was derived from the original "meuse" (French *muer*, to change or moult)—an establishment where the King's hawks and falcons moulted. "As soon as fire-arms were procurable, shooting was enjoyed, and the earlier tedious sport dwindled in favour, so that establishments for keeping large numbers of hawks were no longer required. . . . The retention of the name 'meuse' was illogical when the uses of the establishment were changed, and from it has arisen the absurdity of calling any collection of stabling for horses a 'mews,' while the incongruity is even more apparent in these days when so many old establishments retain that name, but have been entirely given up to the accommodation of motor-driven vehicles!" But the more important matter which Mr. Stratton makes clear is that when Trafalgar Square was laid out there was not, as generally imagined, a wholesale clearance of old property to make a clear space, but that the Square, for the most part, occupies what was always a clear space—originally the "Great Meuse," and later the Court of the Mews, i.e., the Royal stables which Kent built, and on the exact site of which the National Gallery now stands. Many illustrations are included in the article, including a bird's-eye view of the "meuse" in the time of Elizabeth, plans of the Mews in the eighteenth century, a plan of Trafalgar Square with the Mews superposed, and reproductions of old engravings, among these latter being Rowlandson and Pugin's view of the interior of the Mews and a beautiful drawing by Malton, of the Phoenix Fire-Engine House (by Thomas Leverton), which stood in Cockspur Street.

The June issue of the "Review" also contains some further remarkable views of Ypres as it is to-day; an illustrated article on "Dublin After the Rebellion"; an article on Rouillac and Pond, accompanied by a reproduction of Houbraken's engraving of the Chandos portrait of Shakespeare; an article by Mr. Harry Sirt on a seventeenth-century farmhouse at Benhall, Suffolk; and some large illustrations of Moorgate Hall, Finsbury Pavement, E.C.

HERE AND THERE.

IN default of a title, the reader would imagine, from the illustrations below, that this week I was concerning myself with the biggest of big guns in our Grand Fleet, and he might make a rapid speculation as how such matters could, by any stretch, be included appropriately in these columns: but the title will at once explain. This is the door of doors, the *porta maxima* that guards the treasures of a strong-room in the vaults of a great banking establishment—in America, of course. A mighty fellow this fifty-tonner: "some" strong-room door with a vengeance; and, so far as the form and size of its hinges are concerned, surely the ugliest door ever conceived. I have stood by many a great portal old and new, and have noted what the ancient castle builders could do with giant balks of oak strapped together and studded with great nails, and what the modern worker in metals could do in the way of huge iron or bronze doors and gates. I have descended, too, into the sacred depths of a Safe Deposit, and a friendly jailer has turned the



A 50-TON STRONG-ROOM DOOR.

magic key, allowing passage to the inmost sanctum, closed by a strange and fearful door half a foot thick, sheathed with chilled steel, and having on its inner face a wonderful collection of levers, locks, and clocks—the clocks being of special significance, for when set to the desired hour they hold the door fast till then, and by no manner of means can anyone open the door before the clock hand has worked round to the appointed time. But all these doors are mere flimsies when compared with the example illustrated on this page. If Sir James Barrie were concerned, he would assuredly call this the door with "the fifty-ton look."

* * * *

The ingenious modern burglar, with his explosives and his oxy-acetylene burner, is the cause of all this giant door making. Looking at the accompanying illustrations (which, it may be noted in passing, need a human figure in them to show the scale) one might imagine that nothing which the most up-to-date burglar could devise would ever overcome this construction. Let the reader think what a task is here offered by a circular steel door, 36 ins. thick, ground to fit like a stopper in a steel bottle. Even the bolts are so large and heavy that a hand-wheel is needed to throw them, while as to hinges on which a weight of 50 tons may turn, no doubt it needs monstrous hinges to hold such a monstrous door. Safe and vault entrances, it appears, first had straight stepless jambs, and the burglar got on very well with his wedges. Then came rebates and tongues and grooves and stepping. The grooves were packed with felt, and it was shown that gunpowder could not be forced beyond the packing, and that it was difficult to force wedges around the tongues. But liquid explosives altered all this: the felt absorbed nitro-glycerine and became dynamite, automatically just placed where it could do most damage. So the safe-builder went still one better than the burglar and substituted a non-absorbent packing. It is apparently a game similar to that of the big gun maker and the armour plate maker: the one makes a gun which will pierce the thickest armour plate made, and the other then proceeds to make armour plate which will stand proof against the latest big gun. What are the exact relative positions of the safe-builder and the burglar to-day, I am not able to say, but a specialist writing in the "Brickbuilder" for May hardly leaves us with the impression that the burglar is completely done for. This writer assures us that there is absolutely no material, nor combination of materials commercially available, which will afford full and adequate protection if to the cutter-burner outfit is added the welding torch and the blau-gas flame. "Ordinary concrete loses its strength upon the application of great volumes of intense heat and is readily removed even when heavily reinforced. Steels of all kinds are pierced and cut with what, to the layman, is almost unbelievable rapidity. In a recent demonstration made before a party of bankers a hand hole 6 ins. in diameter was cut through a sample of vault lining 3 ins. thick in just three minutes. A hole sufficiently large to admit the body of a man can be cut in ten minutes, and all the apparatus to do this can be carried in a suit-case. . . . The best that can be done to-day is to provide concrete walls of great thickness—two and a half to three feet, or greater if space will permit; the concrete to be formed of especially dense cement and a non-hygroscopic aggregate, strongly reinforced with heavy interlocked metallic sections and backed by contact with a heavy lining, combining steels of high tensile strength and ductility, with tool-proof and cutter-burner resisting sections, arranged and interlocked to produce the greatest possible resistance. Surely if a burglar can get through all this he deserves the contents! If he were a Hun burglar unquestionably he would be entitled to the Iron Cross of the Order pour le Merite.

UBIQUE.



Photo : Thomas Lewis, Ltd.

CURRENT ARCHITECTURE (SERIES III). XXXIX.—HOME OFFICE INDUSTRIAL MUSEUM, HORSEFERRY ROAD, WESTMINSTER.

FRANK BAINES, M.V.O., PRINCIPAL ARCHITECT, H.M. OFFICE OF WORKS.



Photo: Thomas Lewis, Ltd.

CURRENT ARCHITECTURE (SERIES III.). XL.—HOME OFFICE INDUSTRIAL MUSEUM, HORSEFERRY ROAD, WESTMINSTER :
MAIN ENTRANCE.

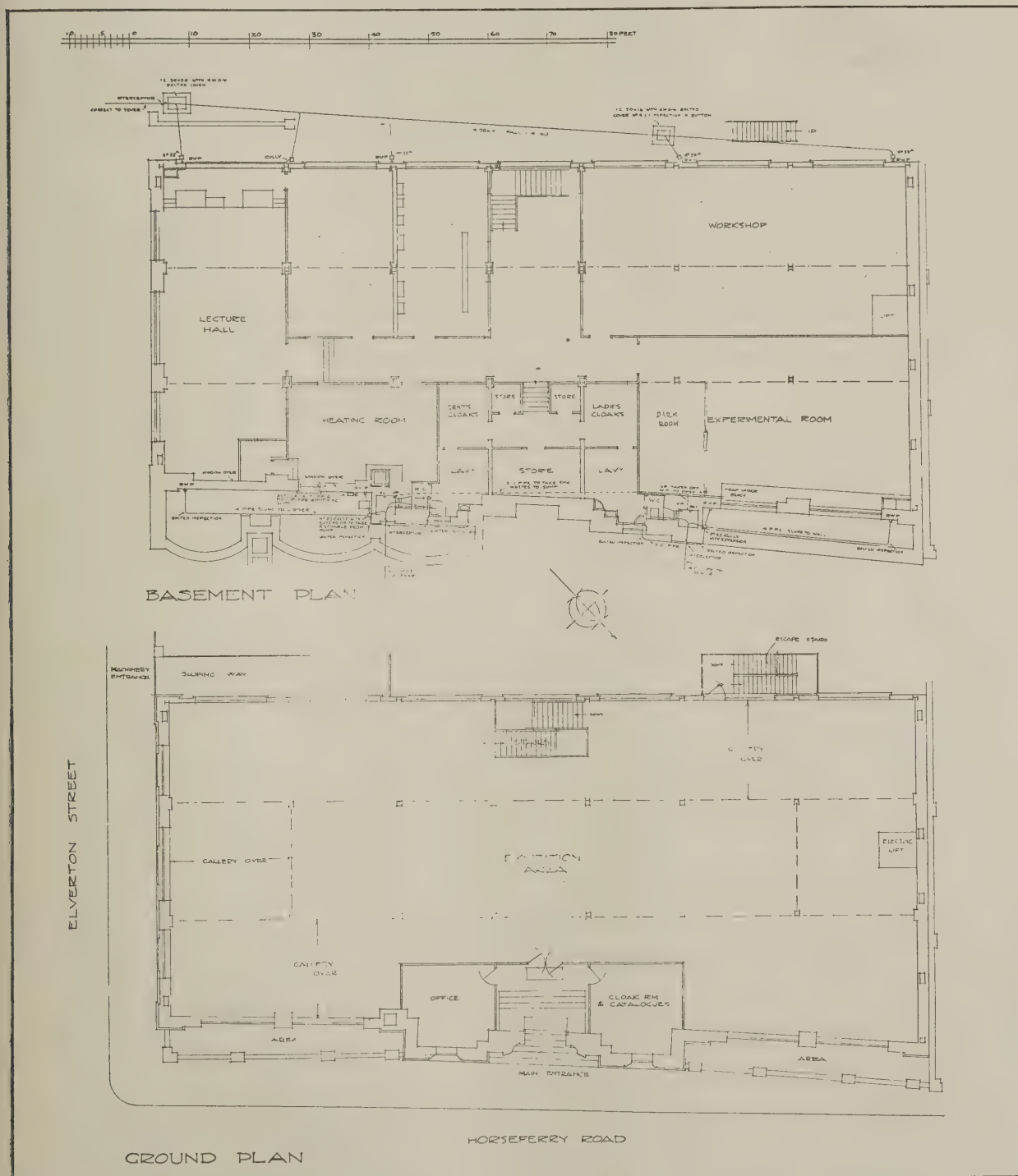
FRANK BAINES, M.V.O., PRINCIPAL ARCHITECT, H.M. OFFICE OF WORKS.

THE PLATES.

Industrial Museum, Westminster.

THIS admirable new building was erected by H.M. Office of Works for the Home Office, for the purpose of exhibiting appliances for the protection of factory workers and others against dangers to health and limb, incidental to their occupation. It was intended that the exhibits should consist principally of actual machines used in factories, and the various safety appliances to be used in connection with them; where it was not possible to exhibit the machines, models and photographs were to be shown. The building consists of a sub-ground floor, ground floor, and a gallery. The sub-ground floor comprises

the lecture-hall, experimental room, workshop, power room, etc.; the ground floor and the gallery being reserved entirely for exhibits. Heating is by low-pressure hot water, and a special exhibition plenum system has been installed for the lecture-hall. The sub-ground and ground floors are lighted by electricity and the gallery floor by gas, both high and low pressure lamps being used for exhibition purposes. The general contractors were Messrs. Davey and Armitage, of Southend. The electric plant was installed by Messrs. T. Clarke and Co. and Messrs. Bertram Thomas, and the gas lighting and exhibition plant by the Gas Light and Coke Co. Messrs. James Cormack and Son were responsible for the heating. The exhibition electric crane is by Messrs. Herbert Morris, and the electric lift by Messrs. William



HOME OFFICE INDUSTRIAL MUSEUM, HORSEFERRY ROAD, WESTMINSTER, LONDON, S.W.

FRANK BAINES, M.V.O., PRINCIPAL ARCHITECT, H.M. OFFICE OF WORKS.

Wandsworth and Sons. The building has now been temporarily converted into a hostel for the purpose of providing sleeping accommodation and meals for soldiers passing through London to and from the front, and thus serves a very excellent purpose under existing war conditions.

Nos. 57 and 58, Lincoln's Inn Fields, London.

The hand of the spoiler has already been set upon Lincoln's Inn Fields, and especially upon the west side the old houses have been demolished to make way for new buildings, which, unfortunately, as architecture, are a poor compensation for the houses they replace. A goodly portion of the old work, however, still remains, and the delightful façade of Nos. 57 and 58, shown on our plate, is preserved intact. The name of the architect who designed it cannot be identified, but the date of its erection is known to be about 1730. In style it follows its neighbour, Lindsey House, which is attributed to Inigo Jones, and, considering the time that intervened between the erection of the two houses, it is remarkable there is so little change in design. Both façades employ the Ionic Order, the pilasters embracing the first and second floors. About 1795 Sir John Soane was engaged to divide the house by a central party wall, and to make other alterations, and to this date the semicircular porch belongs. Soane's party wall intersected the old stone vaulting over the basement, and also necessitated the closing of the central window on the first floor, and the division of the window immediately above, but in 1909 the premises were again united, the first-floor window was opened up, much of the party wall was removed, and a general renovation of the building was carried out. We are indebted to the "Survey of London" for these precise facts.

"Trelissick House," Near Falmouth.

Particulars of this Cornish mansion are given in the article in the next column.

Doorway to Engineering Building, Cleveland.

This is interesting as an example of a modern doorway based on the work of Wren, but carried out in terra-cotta. We reproduce the drawing from our contemporary "Architecture" (New York).

"TRELISSICK HOUSE," CORNWALL.

"TRELISSICK HOUSE," near Falmouth, was erected in 1825, but altered about thirty years later—not to its advantage, as may be seen by comparing the view below, showing the building as it left the hands of the architect, with the view reproduced as a plate in this issue, showing the house as it is to-day.

Cornwall is a part of England where severity in architectural design accords with the local characteristics, and abundance of splendid material for construction determines simplicity of style. For this reason, apart from the question of distance from architectural centres, such as Bath and Bristol, domestic architecture retained a flavour of eighteenth-century charm until the accession of Queen Victoria. There are numerous instances of the passion for mansions in Classic taste, and although additions have since been made and the original happy dispositions changed, there remains some part of the quality which once distinguished these fine houses.

Trelissick stands on an estate formerly belonging to the family of Laurence and sold to Thomas Daniell early in the last century. On the death of this gentleman his son proposed extensive alterations, and finally decided to rebuild. He accordingly engaged the services of a London architect, Peter Frederick Robinson, a pupil of Henry Holland, who had been employed as clerk of the works on the first Pavilion at Brighton, which his master was erecting for the Prince of Wales. Robinson was a man of some erudition in his day, and among other works he projected the continuation of "Vitruvius Britannicus," publishing a description of Woburn Abbey in 1827 and other buildings later. Subsequently he became smitten with the mediæval craze, and edited numerous works treating of old-time cottages.

For Trelissick the younger Daniell required a novel plan, but he left the choice of style to his architect, who produced a design after the Græco-Roman manner of Holland.

As originally schemed, the building was arranged with wings of one storey, each containing a dining-



"TRELISSICK HOUSE," NEAR FALMOUTH, AS ORIGINALLY BUILT, 1825

P. F. ROBINSON, ARCHITECT.



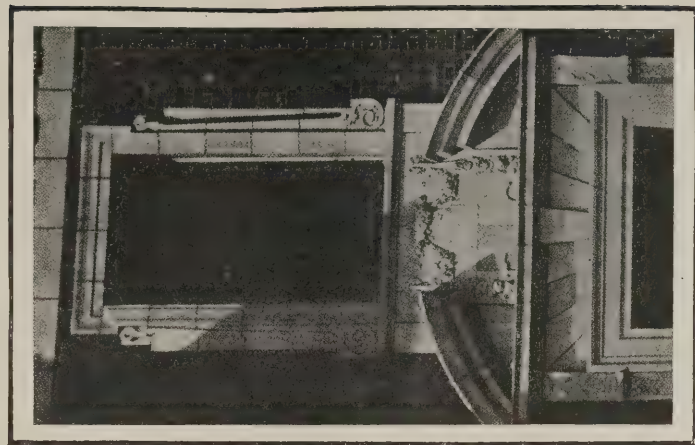
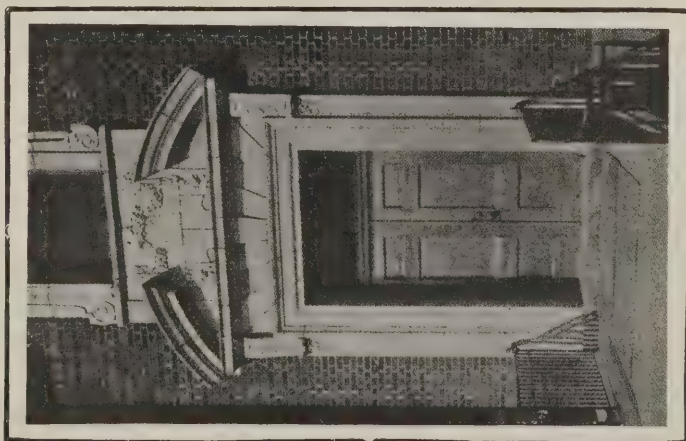
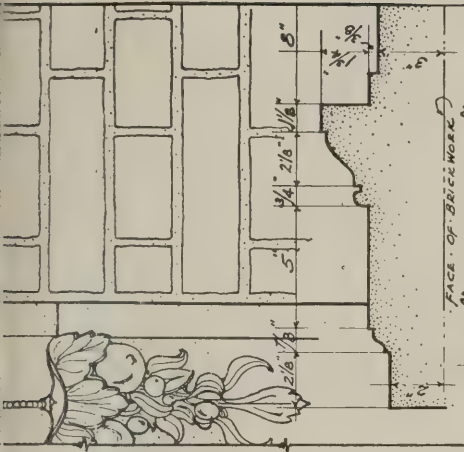
LONDON FAÇADES. IX.—Nos. 57 AND 58, LINCOLN'S INN FIELDS.



SMALL HOUSES OF THE LATE GEORGIAN PERIOD (SERIES II.). XXXVII.—TRELISSICK HOUSE, NEAR FALMOUTH, CORNWALL.

P. F. ROBINSON, ARCHITECT.

[illegible]



ONE, HALF, INCH, SCALE, ELEVATION,

MODERN AMERICAN ARCHITECTURE (SERIES II). I.—DOORWAY OF ENGINEERING BUILDING, CLEVELAND, OHIO.

WALLIS AND GOODWILLIE, ARCHITECTS. DRAWN BY WALTER McQUADE.

room and drawing-room measuring 30 ft. by 20 ft. and 15 ft. high—in themselves apartments of noble proportions; these were connected with a breakfast-room 30 ft. by 18 ft., and a morning-room 18 ft. square. In addition the ground floor contained a hall 30 ft. by 20 ft., a spacious staircase hall and a private bedroom suite. There were originally ten bedrooms on the first floor, but after 1850 these were deemed insufficient, and the resulting additions destroyed the unique composition. Reference to the photograph will show the difference in material to the floor over the wings on either side of the portico, and the steep roof added at the time.

Without going into detail, it is interesting at this point to state the variety of buildings entrusted to Robinson's hand. After leaving the office of Henry Holland he appears to have been engaged in 1805 on the design of Hans Town Assembly Rooms, Cadogan Place; some stabling at Hutton Bushel, Malton, Yorkshire; a marine bath at Westport, Sligo; and a seat at Yedmandale, in Yorkshire. Then followed a commission from a Mr. Bullock, of Liverpool, for the famous Egyptian Hall in Piccadilly (an echo of this building, of the same period, stands in Penzance). After the year 1813 Robinson built a town-hall and market house at Llanbedr, Cardiganshire; Millfield Cottage at Bookham, Surrey; and Fern Acres, near Fulmer, Bucks. In 1816 he undertook a tour on the Continent and to Italy, spending a considerable time in Rome, and on his return carried out additions and alterations to Bulstrode for the Duke of Somerset, a work followed in 1820 by additions to a house at Norbury Park for F. Maitland. In 1829 he was engaged designing a chapel and cottages at Leamington for E. Willes, and a year later carried out the subject of the present note—"Trelissick House," for Thomas Daniell. His other works include the following: Woolmer Lodge, near Liverpool, 1830; alterations to a castle in Sweden; addition to Singleton House, near Swansea; alterations to a mansion at Budehead, Swansea; a drawing-room at Hever Castle; and Sampford House, Essex.

In 1835 Robinson became one of the first vice-presidents of the Royal Institute of British Architects, and after 1840 he resided at Boulogne, where he died in 1858 at the advanced age of eighty-two.

The foregoing is a brief account of the life activities of an architect who flourished at a time when the "grand style" in architecture was still in favour: but his own books and writings show that he experienced the same vacillation between Mediæval and Classic tendencies which beset his contemporaries and hastened the confounding of taste. In the first quarter of the nineteenth century Classic expression for architecture was sought for with good result in the West of England. Foulston and Wightwick were changing taste from Plymouth to Penzance. Alexander had completed the war prison on Dartmoor, in Piranesian vein, and every local builder understood the value of good proportion. For fifty years the tradition lingered on until, in the late 'sixties, mediæval forms and variegated materials were imported with savage instinct to upset the mental equilibrium of the Cornish. To many the suggestion that early nineteenth-century architecture in the Duchy follows traditional lines partakes of an egregious misstatement. Yet a close study of facts brings to the surface evidence of a distinctive branch of the main development which not only repays study, but asserts local character.

Sir Arthur Quiller-Couch, in his many delightful novels, and in his comedy "The Mayor of Troy," has made a pretty full revelation of the peculiarities of the Cornish character. If the people are but half as interesting as he renders them, it almost inevitably follows that the expression of Cornish character in terms of architecture is no less alluring. Cornwall, indeed, is rich in buildings that convey the native charm.

A. E. R.

CORRESPONDENCE.

Lord Kitchener and Architecture.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—Now that we are recovering from the first shock of Lord Kitchener's tragic death, it may be permissible to recall that "K. of K." was much interested in architecture. On acquiring his fine old Jacobean house in Kent, he was careful to rid it of certain modern excrescences. Architecture, in fact, was one of his hobbies, and it is said that he had considerable taste in it. This fact, I think, should receive honourable mention in your Journal.

Blackheath, S.E.

V. T. C.

Ely House, Dover Street.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—For the sake of historical accuracy, may we correct a false impression conveyed by the photograph and note on the staircase hall at Ely House in your issue for June 7? The photograph shows the hall not as originally designed by Sir Robert Taylor, but as "swallowed up in the Albemarle Club." The stairs have been lifted up a storey, now running from the first to the second floor, instead of from the ground to the first. The direction was also reversed. At the second-floor level there was a balcony round a well, but at a level 3 ft. below the present landing. The doorway on the right hand was refixed to suit the new level, while that opposite is practically new.

London, W.C.

SMITH AND BREWER.

"Simple, Effective, Inexpensive, and Spectacular."
To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—What is this question of the Land? The Land—which we are all being called upon to defend—should belong to us all, inalienably and without right of transfer. The present holders should be dispossessed, and if annoyed should be compensated simply by being referred back to their long and peaceful but unjust enjoyment of portions of the universal crust. The lawyers could be piled upon the accumulation of their Deeds and set alight. This process would be simple, effective, inexpensive, and spectacular. In the meantime I would fain remark that tautological verbosity seems to be no monopoly of lawyers.

London, W.

LANDLESS.

[Some comment on the above is made in our editorial columns this week.—EDS. A. and B. J.]

Ancient Glass.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—I have shown your note on the protection of ancient glass to a famous designer of glass in France, M. Turpin, who makes the following remarks, which I think you would like to hear of:

1. The paste or gum used for securing the paper would have to be very carefully selected, as many contain acids which would destroy the colour.

2. To remove ancient glass, which is often very fragile, only experts should be employed, or much damage might otherwise be done.

3. Ancient glass loses its interest to a great extent when removed, for in many cases it was specially designed for the position which it occupies, and M. Turpin doubts if it would be replaced exactly. At any rate the historical value would not be so great as if it were left just as fitted by the mediæval craftsmen.

Folkestone.

WM. HY. ELGAR.

THE A.A. WAR SERVICE BUREAU.

The following report upon the work of the Architectural Association War Service Bureau is reproduced from the May issue of the "A.A. Journal":

With the advent of the Military Service Bills and the consequent general changes in the recruiting arrangements for the army, it is perhaps opportune to make a general report upon the work of the A.A. War Service Bureau.

The Bureau was started a few days after the commencement of war, largely on the initiative of Mr. Alan Potter, who undertook the secretaryship. The object of forming the Bureau was to help men in the architectural and allied professions and trades, by obtaining for them information as to the corps which were recruiting, in which their special knowledge would be of value.

At the beginning of the war most people were in complete ignorance of military matters, and had little knowledge of the various branches of the army and their work, and the Bureau made it its business to be a centre from which information and assistance could be obtained by anyone wishing to enlist. To further its usefulness, the Bureau got into touch with various units and recruiting offices, and made arrangements whereby parties of men sent by the Association were kept together after enlistment. This arrangement was valuable in encouraging professional men to enlist in the early days of the war. Without exception the commanding officers welcomed the type of men which the Bureau was able to send, and did everything possible to facilitate matters.

The Royal Engineers has been a favourite branch amongst would-be recruits, and many hundreds of men have been drafted into its various branches, such as signalling, fortress, field companies, etc. The Bureau has been able to obtain commissions in this and other branches of the service for a considerable number of men.

The various sanitary companies have received a very large number of recruits through the Bureau, and in these professional training has been of the greatest value.

Special efforts were made to obtain recruits for the "Artists' Rifles," with considerable success, and openings have been found in all the following units for recruits: Royal Engineers (Regulars); 1st and 2nd London Div. Engineers (T.); 1st and 2nd London Sanitary Companies; "Artists' Rifles" (O.T.C.); "Artists' Rifles" (Engineer Section); Inns of Court O.T.C.; London Rifle Brigade; Royal Naval Air Service; Royal Naval Division (Engineering Units); Army Pay Corps; Army Ordnance Corps; 8th London (Howitzer) Brigade, Royal Field Artillery; Royal Field Artillery; Royal Garrison Artillery; Army Service Corps, Mechanical Transport; Army Service Corps, Horse Transport; London Scottish; Hon. Artillery Company; Westminster Dragoons; Queen Victoria's Rifles; Public Schools Batt., Royal Fusiliers; 2nd South Midland Brigade Field Ambulance (Res.) (T.F.); Civil Service Rifles; King's Royal Rifles; 25th (Cyclist Batt.) London Regt.; Royal Flying Corps; and various other infantry regiments.

It is estimated that at least 2,000 applications to the Bureau have received attention, and although it is difficult to say definitely that all of these men have acted on the advice of the Bureau, from records

kept it is known that the vast majority of them have joined the branches to which they were recommended.

Amongst the members of the building trades a very large number of recruits have been drawn, one company of 300 being raised within a few days for the special engineering work in the Naval Division.

It was found, on questioning applicants, that in many cases they possessed qualifications which fitted them for branches of the service of whose existence they were not aware, and, apart from the fact that these men were sent to vacancies where their services were of special value, the men themselves received the advantage of higher pay on account of their skilled training.

The Bureau has had to deal with intermittent rushes of recruits, but there has always been a steady stream until recently, when the new military arrangements altered matters very considerably.

Apart from the actual enlistment of recruits, much work has been done in attending to private matters, such as the obtaining of correct separation allowances, and many other details which it is unnecessary to enumerate; but in one case at least the arrangement for the removal and warehousing of a recruit's furniture was undertaken.

The A.A. Active Service Committee was an outcome of the Bureau, but everyone is fully cognisant of the excellent work which is being undertaken by that Committee under the chairmanship of Mrs. Webb, and this will no doubt be fully dealt with in a report at a later date.

As a result of efforts in another direction, the A.A. Red Cross Detachment (4th London) has been called into existence, and is now, and has been for some time, undertaking most useful work, but, again with this branch, its work must be recorded at a later date in a separate report.

Every credit should be given to Mr. Potter for the valuable work he did in carrying on the Bureau up till April of last year, when he joined the R.N.A.S., and to Mr. F. R. Yerbury, who then filled his place. It was due to their initiative that the Bureau came into existence, and to them must the credit be accorded for the important place which the Bureau has taken in the Association's work since the war began.

To Mr. G. O. Scorer also thanks are due for the assistance which he gave for many weeks in connection with the work, and the help given by Mr. Alexander of the A.A. office staff deserves every praise.

A.A. Voluntary Aid Detachment.

Members are invited to join the above detachment, which is now doing a large amount of useful work in supplying part-time orderlies to hospitals, air-raid duty, etc. Anyone desiring further particulars should communicate with F. R. Yerbury, Quartermaster, 37, Great Smith Street, S.W.

A.A. Active Service Committee.

Gifts are required in money and kind for the Active Service Committee. A very heavy demand has been made by those with whom the Committee is in touch for magazines and paper-covered novels, some thousands of which have already been sent out. Will members please send any spare magazines and professional journals to 37, Great Smith Street, Westminster?

A.A. Members Serving with the Forces.

The May issue of the "Architectural Association Journal" contains the following additional names of members serving

with the forces. It is explained that the names are published as information is received and not according to date of enlistment. (Total to date: 479.)

Officers.

Blakiston, J. Francis, Sec. Lieut., Indian Army Reserve of Officers, att'd. 17th Cavalry.

Leadam, Grahame S., Sec. Lieut., 29th Battery, 42nd Brigade.

Stanford, G. D., Lieut., 3rd Batt. Devon Regt.

Swales, T. M., Sec. Lieut., 2/3rd London R.F.A.

Privates.

Cockle, S. G. A., Royal Flying Corps.

Griffin, Junr., H., R.A.M.C. (T.).

Jones, A. L., London Rifle Brigade.

Keep, N. P., Queen's Westminster Rifles.

Kennington, H., Civil Service Rifles.

McEvoy, F. A., 11th Gloucester Hussars.

Shiner, L. A. D., Artists' Rifles.

Promotions.

Methuen, Hon. A. P., from Sec. Lieut. to Capt., Scots Guards.

Payne-Wyatt, L., from 6th Seaforth Highlanders to Sec. Lieut., Royal Fusiliers.

Correction.

Hookway, G. J. F., 2/1st Cambridge Regt. (Previously entered as 15th Middlesex Regt.)

OBITUARY.

Captain Gilbert Marshall Mackenzie.

Captain Gilbert Marshall Mackenzie, of the Seaforth Highlanders, who was killed in one of the gallant attempts to relieve Kut, in which he was the officer in command of some 600 or 700 men, was a son of Mr. A. Marshall Mackenzie, A.R.S.A., and brother of Mr. A. G. R. Mackenzie, F.R.I.B.A., who has been badly wounded in the war. Captain Gilbert Mackenzie was educated at Charterhouse and at Pembroke College, Cambridge, where he was one of the first undergraduates to take the new architectural course; at the A.A. evening school; and at the Atelier Gromont, Paris. Joining the Special Reserve of Officers of the Seaforth Highlanders in 1911, he mobilised with the 2nd Battalion of that regiment on the outbreak of the war, served at Le Cateau, the Marne, and the Aisne; was wounded at Ypres in April, 1915, and went to Mesopotamia early in the present year. He was only twenty-five years old.



THE LATE CAPT. GILBERT MARSHALL MACKENZIE, A.R.I.B.A.

THE REBUILDING OF DUBLIN.

Question in House of Commons.

In the House of Commons, on June 1, Mr. Ronald McNeill asked the Prime Minister whether, with a view to the prevention of vested interests being created which would interfere with the rebuilding of Sackville Street, Dublin, as part of an architectural and town planning scheme worthy of the position and natural features of the thoroughfare, the Government would take immediate steps to acquire the whole area in order to be in a position to control the rebuilding.

Mr. Asquith replied that the Home Secretary was going to Dublin to discuss this and other cognate matters. In the meanwhile he could make no further statement.

Letter from the R.I.B.A. President.

The following letter has been addressed to the editor of "The Times":

Sir,—It is to be hoped, notwithstanding the difficulties and distractions of the times, that the rebuilding of the Sackville Street district will be carefully considered. There is always a temptation to go along the line of least resistance and to rebuild a destroyed area in the quickest possible way in order to rehouse the inhabitants; but if careful thought and a little time are given to the problem now the result should be an ordered and considered scheme worthy of the City of Dublin and its fine architectural traditions.—Yours faithfully,

ERNEST NEWTON, President of the
Royal Institute of British Architects.
9, Conduit Street, W., June 5.

The Archbishop of Dublin Proposes a New Cathedral.

Archbishop Walsh, in a letter to the Irish Press, writes:

"My interest in the [rebuilding] project lay chiefly in its connection with the opportunity it seemed to afford for making at all events a beginning of the work of providing us with a Catholic Cathedral in Dublin, and of thus filling the gap created centuries ago in the provision for public worship in the city by the transfer of our old Cathedrals of St. Patrick's and Christ Church to the use of our Protestant fellow-citizens.

"The plan recently before the public was that of Professor Geddes. One of its main features was the opening of a great thoroughfare—a 'Via Sacra'—which was to run past St. Patrick's and Christ Church Cathedrals, on, I think, to the Broadstone. It was at all events to pass between the Four Courts and the Ormond Market district, thus opening the way for the construction of a new cathedral in the district then but recently cleared by the Corporation for the erection of artisans' dwellings.

"Notwithstanding, however, the goodwill of the Corporation, there were obstacles in the way, and the scheme had to be abandoned. It has now been suggested to me, not only by members of my own flock, but also, and in a specially encouraging way, from the Protestant side, that the present lamentable condition of our city may afford an opportunity of making available a really suitable site for a cathedral in one of the devastated districts.

"Is it too much to hope that some suggestions may be made, possibly by architects or other experts, indicating a practical way of carrying out the project? Of course, it will be understood that the

cathedral should be one really worthy of the site secured for it."

"P.S.—I am well aware that abundant help for the carrying out of such a project will be forthcoming from our fellow-countrymen abroad, especially in America and Australia. But I need hardly add that, as the erection of a cathedral worthy of the capital of Ireland would, of necessity, make a heavy demand upon our own people, I do not at all contemplate the building of a cathedral in Dublin in a time of stress such as the present.

"If a suitable site could be secured, my idea would be to have it laid out as a public garden and put in trust, thus securing it for the purpose of public recreation, somewhat as St. Stephen's Green is at present, until the work of building could be taken in hand."

Views of Institute of Architects.

At a meeting of the Council of the Royal Institute of the Architects of Ireland, held to consider the conditions which would affect the rebuilding of the destroyed premises or areas in the City of Dublin arising out of the recent rebellion, the following resolution was adopted:

His Majesty's Government having indicated its intention of taking steps to facilitate the restoration of the destroyed buildings in Dublin by proposing to assume, as the maximum of its grant, the same liability as would have fallen on the insurance companies had their policies covered loss arising out of the rebellion,

The Council of the Royal Institute of the Architects of Ireland would urge on the Government the desirability, in making those ex gratia grants, of imposing conditions or restrictions with regard to the design and reconstruction of individual buildings in important thoroughfares such as Sackville Street, Eden Quay, Abbey Street, Earl Street, and Henry Street so that they shall conform to some general scheme of street improvement.

The Council would emphasise the necessity of imposing such restrictions inasmuch as the Municipal Council has no control over the design of new buildings, other than as regards their street alignment, sanitary fitness, and the fulfilment of certain conditions in regard to construction.

The Council would urge on the Government the advisability of attaching such conditions to these grants so as to ensure that public money should be expended in the interests of property owners and the enhancement of the architectural dignity of the city.

To achieve this object the Council of the Institute would respectfully suggest that a Commission be appointed to control the conditions subject to which designs for new buildings would be sanctioned. Control should be exercised in such matters, among others, as general street improvement, harmony, and symmetry in the design of new buildings, and the settlement of questions in regard to right of light, party walls, etc.

Citizens' Association and Reconstruction.

At a meeting of the Executive Committee of the Dublin Citizens' Association it was resolved that no settlement of the question of the rebuilding of the Dublin streets could be deemed effective or satisfactory unless the Government supplies those affected with means sufficient to re-erect houses on a par, at least, with those destroyed.

Regarding the municipal rates on the premises aforesaid for the current year, the Town Clerk was written to the effect that as such rates would ordinarily be

irrecoverable, the Corporation should apply to the Government for an equalising grant.

Suggested New Business Centre.

Mr. T. Pictou Bradshaw suggests a method of meeting the serious difficulty of accommodating the displaced traders while Sackville Street is being replanned and rebuilt.

The greater part of Gloucester Street, close by, he says, is either already in ruins or rapidly becoming derelict. Next to Sackville Street, this could be made the finest business thoroughfare in Dublin, linking up direct communication from Upper Sackville Street to the North Strand Road. "I have on more than one occasion shown the advantage this would be. One obstacle, however, stood in the way, namely, the removal of the old church of St. Thomas, once liberally supported by the wealthy residents there, now situated in probably the most congested slum district in Dublin. It cannot be self-supporting while Trinity Church in Gardiner Street, one of the largest in the city, is little used and almost empty. Surely it would be better to remove the old church of St. Thomas, and with the compensation obtained endow Trinity as the parish church of the district, thus removing the obstacle.

"What I suggest is that some arrangement should be considered whereby the Treasury and the Corporation can acquire the interests in Gloucester Street, remove the old derelict houses, with the old material reconstruct temporary concrete walls with temporary slate or flat roofs; allocate these erections to the Sackville Street traders, free, or at nominal rents pending the reconstruction of Sackville Street; and when these traders remove to their old site Gloucester Street will then have become automatically a business-centre. Then remove the temporary buildings, clear the site, and let at rents on long lease the frontage to capitalists and traders, who will invest money there and pay rent which will show a fair return on the undertaking. They will thereafter produce in rents, rates, and taxes a good income to the Treasury, the Corporation, and the capitalist, besides opening up and improving Upper Sackville Street, the entrance to Clontarf and the north side, and property therein situated generally, wiping out a slum area and relieving a dangerous and congested area, namely, Earl and Talbot Streets, now used as the approach to Amiens Street and Clontarf.

There is no reason why trams should not still continue their present course, while the new thoroughfare, being a short route, could be used by cyclists, motorists, and horse-drawn vehicles. The Corporation, I know, were favourable to the carrying out of this scheme. The difficulty was the money and the removal of St. Thomas's Church."

The Traders' Attitude.

Mr. Robert J. Kidney, secretary of the Dublin Fire and Property Losses Association (1916), whose offices are at Star Buildings, 12-14, College Green, Dublin, writes:

With reference to the suggestion made by the Lord Mayor that power should be obtained to deal with the style of architecture, etc., in connection with the buildings to be erected in the area devastated during the recent rebellion, the Committee of the Dublin Fire and Property Losses Association thinks it advisable to make its position perfectly clear.

They will strongly oppose any such scheme unless: (1) It is perfectly certain that owners will not be subjected to any-

delay whatever in starting and completing rebuilding operations. (2) The business men interested must be satisfied that the architectural features of each building shall be such as will be most suitable for each trader, in carrying on his own business, according to his experience and requirements. (3) Any expenses put upon owners of property by reason of any such scheme as outlined must be borne either by the State or the Municipality. (4) Any interference with the existing frontage lines involving reduction in the area of property for business purposes, must be fully compensated for.

[For comment, see the Editorial pages.]

LEGAL.

Builders' Claim for Work Done Under Contract.

Wilson Rae, Pixton and Co., Ltd., v. Laycock.

June 1. Official Referee's Court. Before Mr. Muir Mackenzie.

Mr. Muir Mackenzie gave judgment in this action (the hearing of which had occupied nearly a week), in which Messrs. Wilson Rae, Pixton and Co., Ltd., builders, of Queen Victoria Street, E.C., claimed from Mr. Horace Scott Laycock, of Great St. Helens, £546, balance of account for converting Brixton Hall, in Acre Lane, Brixton, into a picture palace. The defendant pleaded that the work was not in accordance with contract, and counter-claimed in consequence. He also claimed damages for delay.

Mr. Patrick Hastings, instructed by Mr. Morton Patterson, appeared for the plaintiffs, and Mr. Owen Evans, instructed by Messrs. Garard, Clarke, and Wyatt, for the defendant.

The Official Referee, in giving judgment, said that the first operative clause in the agreement between the parties, which was in writing, was to the effect that the contract should be carried out "forthwith, with the utmost expedition," and that the plaintiffs should carry out the work to the satisfaction of the L.C.C. and the local authorities, but there was nothing in the contract which bound the plaintiffs to complete by a certain date. He found that no verbal agreement to that effect had been proved, and that the plaintiffs did not know, as alleged, that the completion of the work by July 25 was necessary for the defendant's enterprise. There had been no breach of contract by reason of delay. The next issue was whether the work had been done in accordance with the contract. The plaintiffs having substantially done the work were entitled to the price. The defendant, however, had made out a long list of items which he said had not been done in accordance with the specifications, the total of which amounted to £309. The evidence as to this had been very conflicting. Mr. Appleton, a surveyor, and a number of workmen had been called for the plaintiffs to say that the work was properly done, and Mr. Stevens, a surveyor, and other workmen were called for the defence to say that the materials were bad and that the work was not in accordance with the specifications. As a result he found that the work had been done in such a way as to satisfy all reasonable requirements. The defendant was entitled, however, to certain allowances amounting in all to £65 6s. 10d., and there was a claim by him for doors, gates, and other things which the plaintiffs had taken away. The counter-claim for damages failed. On an adjustment of the figures

he found that the plaintiffs were entitled to £475 7s. 2d., for which amount he gave judgment for the plaintiffs with costs.

Judgment was entered accordingly.

The £97,000 Claim by Builders.

Spencer Santo and Co. v. Commissioners of H.M. Works and Public Buildings.

June 2. Official Referee's Court. Before Mr. Pollock.

After a week's adjournment owing to the indisposition of Mr. R. N. Patten, the chief witness in support of the plaintiffs' case, the hearing of this action was resumed, when Mr. Patten was recalled and further cross-examined by Sir R. Acland, K.C., after having already been in the witness-box for nine days.

The witness was closely questioned by Sir Reginald upon the details of the work, particularly in regard to the stone, iron, and concrete work, the alterations in which it was alleged had been prejudicial to the plaintiffs. As to the concrete work he was unable to say what the cost per foot run was in fact, although it was considerably more than the contract price owing to the alterations in the plans. The stonework had been enhanced in cost by the largely increased number of stones used and the increased number of joints to be made in consequence.

Witness was closely questioned as to the charges made for extras, particularly in relation to the steelwork, and masonry. The steel joists, he said, owing to changes in the plans, had involved increased cost for labour. On 3,639 cwt. of steelwork the cost had been 1s. 3d. per cwt. The cost for fixing arranged for by the contract was 25s. per ton, and owing to the alterations the cost had been doubled. On the question of delay witness said that he had claimed for delay in delivery of drawings.

Asked upon what principle he had made out his forty pages of particulars of extras, witness said he did not see any principle in it.

Sir R. Acland, K.C.: And I am rather inclined to agree. Is it your view that in a building of this size, covering nearly 3½ acres, the builders are entitled to know at the date of the contract the class of building that is to be erected?—Yes.

Sir R. Acland: Do you think that of a building taking five years to complete you ought to have had a complete set of drawings at the date of the contract?

Witness: I agree with that. I am entitled to know what building I am going to erect at the date of signing the contract.

Sir R. Acland: Large Government offices of 800 rooms to be decided upon in all its details the moment the contract is entered into, even down to the division of the rooms?

Witness said it was not reasonable to divide up rooms at the end of the job. If he did not have the information, he was entitled to charge. He was entitled to know at the date of the contract the details of the joinery. If he had not full information at the time, he was placed at a disadvantage with regard to the purchase of materials. The specifications contained 381 clauses, and 229 of them were struck out by variation. The specifications became inapplicable, therefore, to the extent of two-thirds owing to variations.

The hearing was adjourned.

EMBARGO ON FOREIGN GRANITE.

At a meeting of the Aberdeen Chamber of Commerce, the Chairman submitted the report of the General Purposes Committee. He said they had had a large and influential deputation from the granite trade, who

told them that legislation at present threatened to extinguish the granite industry in the city. Local quarries, being seriously depleted of men, could not supply the trade, and the stone most in demand was got from Sweden. The stock of that stone in the Granite Supply Association's yards was reduced now to about 14,000 cubic feet, and eight or ten yards had already been compelled to shut down. The Government said that the shipping was required for other and more necessary purposes, and that granite was a luxury. Against that the granite trade told them that the ships that brought over granite belonged to the quarry owners. Much was brought over in small vessels, which were not useful for other purposes, and they thought that unless the ships came to this country they would take the stones probably to Germany. They wanted the support of the Aberdeen Chamber of Commerce in putting the matter before Mr. Runciman, President of the Board of Trade. The committee saw no reason for not supporting them, especially as that would be a very serious matter for Aberdeen. Nine hundred or 1,000 men had been called up, but there were still 1,200 or 1,400 men in the granite trade who would be thrown out of employment in the event of the industry being brought to a standstill. The committee were to consider the matter, not so much from the point of view of the granite trade as from the point of view of the city as a whole.

The action of the committee was approved of.

BAD BUILDING IN THE "GOOD OLD TIMES."

In a paper read before the Concrete Institute, Mr. W. G. Perkins observes that the popular idea that buildings in the "good old times" were solidly constructed is erroneous. The majority of the buildings erected in London 100 to 200 years ago were, he states, constructed in the most inferior way. The mortar appears to have been compounded with a fat lime, dry slaked, mixed with the "top spit" of the field. Naturally it has had no binding properties, and is now just so much dusty rubbish. The bricks, moreover, were badly shaped, and they were easily broken, so that in taking down old walls course after course of what appear to be headers are found to be merely "bats." The wall thus consists of a number of 4½-in. layers with no efficient inter-connection. These have separated and bulged, this condition being the state of many dangerous structures to-day. This bulging is, Mr. Perkins states, generally found in the basement storey, where the thickness of the wall is suddenly diminished by a set-off from, say, 1 ft. 10½ in. to 1 ft. 8 in. In other cases a triangular patch of brickwork bursts from the walls. He has, moreover, observed a number of cases in which party walls 50 ft. high and perhaps 200 years old have failed by crushing, though subject to little more than their own weight, the stress being certainly under 3 tons per square foot. Brickwork of this inferior quality is, Mr. Perkins states, always stronger when exposed to damp, as the moisture enables the mortar to set to some extent. In other cases old walls have been found to consist of two skins of brickwork 4½ in. thick, tied together by wooden laths at 18-in. intervals, the space between being filled in with small pieces of brick and stone. Many variants of this procedure were frequent, it appears, in the building practice of our ancestors.

TRADE AND CRAFT.

Floor Slab Reinforcement.

An elegant booklet issued by the British Reinforced Concrete Engineering Co., Ltd., 1, Dickinson Street, Manchester, contains several excellent process illustrations of important buildings in which floors have been reinforced with B.R.C. Fabric. As the several well-written articles deal mainly with the principles or *rationale* of this method of construction, and the B.R.C. Fabric is not unduly obtruded, they make very agreeable reading, from which much profitable information of a general character is derivable. In an article on "Simplicity in Reinforced Concrete Design," it is remarked that although the design of a complete reinforced-concrete structure requires more or less expert knowledge, which can only be gained by special study and experience, there are certain simple portions of such work and certain reinforced-concrete portions of composite structures which can be designed without expert knowledge by reference to published tables giving sizes of concrete and reinforcement, and that this particularly applies to floor slabs, a floor slab in its simplest form consisting merely of a sheet of concrete four or five inches thick, in which the reinforcement is embedded. Other articles in the booklet relate to the test of a floor slab at Halifax; to the effectual resistance of a reinforced concrete wall at Falmouth to the battering of heavy seas; and to the particular features in floor-slab reinforcement. A long list of important works in which B.R.C. Fabric has been used is included in the booklet, which is a most tasteful as well as a most useful production.

SOCIETIES AND INSTITUTIONS.

Royal Institute of the Architects of Ireland.

The Council met on Monday, June 5, the President, Mr. R. Caulfeild Orpen, in the chair.

In connection with the question of the rebuilding of the late destroyed areas the following resolution was adopted:

That the Government should embody in any Bill dealing with the rebuilding, "power to acquire in the Sackville Street area all the sites of the destroyed property, and where necessary those of the premises adjoining, and to redistribute these sites, define the boundaries, and control the designs."

A letter was received from the Architectural Association of Ireland, expressing its approval and general adherence to the terms of the resolution adopted by the Council dealing with the desirability of imposing conditions or restrictions with regard to the design and reconstruction of buildings in important thoroughfares, so that they shall conform to some general scheme of street improvement.

The following correspondence and reports were received and dealt with:

Letters from the Royal Institute of Architects, Dublin Industrial Development Association, F. B. Pearson, Esq., and the Architectural Association of Ireland, and reports from the Ancient and Historic Buildings Committee and from the Rebuilding of Sackville Street Area Committee.

Architectural Association of Ireland.

The following resolution was passed at a meeting of the Committee held on May 31:

"In view of the large amount of im-

pending architectural work in Dublin, the Committee of the Architectural Association of Ireland desire to call the attention of architects in practice and assistants to the register which is kept at the Association offices. This register—under the present abnormal conditions—they have decided to throw open free of charge. Every effort will be made to assist practising architects and assistants at the present juncture." Applications should be addressed to the Hon. Secretaries, the Architectural Association of Ireland, 15, South Frederick Lane, Dublin.

The Surveyors' Institution: Military Service.

The large number of men possessing surveying and constructional qualifications, who are now being called up for military service, makes it impracticable for the authorities in all cases to take advantage of their professional experience by allocating them to the technical branches of the Army. It may, therefore, be of interest to some to hear that the Secretary of the Institution is in a position to say that Lieut.-Colonel Cranfield, Commanding 3/7th D.C.O. (Middlesex Regiment), is prepared to give members of the Institution or their assistants an opportunity of enlisting in that battalion, and, as far as possible, to allow them to serve together in the same platoon. Intending recruits should communicate direct to the headquarters of the battalion at Solefields Camp, Sevenoaks.

NEWS ITEMS.

Moorgate Hall, London, E.C.

The stone carving and modelling for this building (illustrated in our issue for May 31) was executed by Messrs. E. J. and A. T. Bradford, 62a, Borough Road, London, S.E.

Proposed Workmen's Dwellings at Rotherham.

The Housing Committee of Rotherham Borough Council have inspected a site of nine acres of land for the erection of workmen's dwellings near the Aldwarke pumping station. It is recommended that the Town Clerk negotiate with the owner for its acquisition.

Wages Increased in Liverpool and London.

The National Conciliation Board of the Building Trades, which met in London, has decided to grant an increase of 1d. per hour to all sections of workmen employed in the building industry of Liverpool and Birkenhead. The decision affects many thousands of carpenters, joiners, masons, electricians, and other trades, including labourers. An application by the different craftsmen and labourers in the London district resulted in a similar award.

Back to Central London.

It is observed that many middle-class families who went to live in the suburbs a few years ago are returning to Central London because they find that food is too dear—especially at the war-time standard—in the outlying districts. This interesting fact is brought out in an inquiry which is now being conducted by the Charity Organisation Society into the housing conditions of London. Mr. W. Lawton, the secretary of the Society of Medical Officers of Health, has been experimenting in the cost of living in London. By street marketing he finds it possible for people to live on food costing five shillings per week. Reports from the

Holborn and Newington districts show that many middle-class families are returning from the suburbs so as to buy their food at cheaper rates in the markets of Central London.

London Improvement Schemes.

A report presented to the London County Council states that the cost of completing the Tabard Street, Grotto Place, and Crosby Row scheme would be £273,300, as against an estimated cost of £473,300. The result of the arbitration in the disputed cases was satisfactory, the total of the awards in respect of thirteen claims amounting to £10,774 11s., little more than £350 in excess of the total offered by the Council, while the total amount claimed in these cases was £32,263.

Dampness in Hot Countries.

Owing to the rainy seasons in most hot countries, as much care is required to guard against dampness in buildings as in our islands. At the headquarters of the Commanding Officer at Ballygunj, India, the inner rooms for several years caused much trouble on account of severe dampness. We hear that the trouble has now been overcome with a Pudloed cement rendering on the floors and walls.

Lieutenant John Firth.

Our friends in the north will be interested to hear that Mr. John Firth, who represented in the Glasgow district the business interests of Technical Journals, Ltd., the publishers of this Journal, and who enlisted on the outbreak of the war in His Majesty's forces, has been promoted to lieutenant. He is now quartered at Salonika, and reports himself as being in the best of health and spirits.

Bradford and the Competition Question.

A movement in favour of engaging local architects to prepare the designs for the more important buildings which the Corporation may require is on foot. Every committee now imposes duties on the Architect's Department, from the designing of small structures to the reconstruction of Bolling Hall, and it is argued that greater variety would be secured in public buildings by distributing the work.

THE COMMITTEE ON WAR DAMAGE.

We are informed that this Committee, under the presidency of the Lord Mayor of York, is making steady progress with its work. Since the London Guildhall meeting, held in April, fifty-one corporate bodies have joined the movement, and the memorial to ask the Government to abandon their scheme of war damage insurance, to return the premiums already paid, and provide out of national funds for compensation to those who suffer damage from the attacks of the enemy, is now supported by no less than 443 municipal authorities, representing a population of 14,181,501. The memorial is also supported by a number of other corporate bodies, including chambers of commerce and City livery companies.

Lord Parmoor, judicial member of the Privy Council, referring to the prayer of the memorial, says: "I feel most strongly that this particular war risk, which comes from air raids and bombardments, should not be dealt with by insurance, but should be dealt with by the State as a matter of national and Imperial indemnity."

Enquiries should be addressed to the Honorary Secretary, Mr. W. H. Southon, 115a, Chancery Lane, London, W.C.

PUBLISHER'S ANNOUNCEMENT.

THE question of the cost of Advertising is governed entirely by the circulation of a publication. The prices for small Advertisements enumerated below are framed upon the lowest possible basis in order to allow the use of the columns of the Journal for "Wants," &c., at a figure well within the reach of everyone.

Advertisers are purchasing the circulation of a paper in buying space for their announcements, and we are able to announce that "The Weekly Nett Sale of The Architects' and Builders' Journal is larger than that of any other Architectural Journal."

Appointments Wanted.

4 lines (about 28 words) 1s. 6d.; 3 insertions, 3s.

ADVERTISER (31), with experience in architect's and estate office, also acted as clerk of works, seeks any suitable appointment. Exempt military service.—Grist, The Link, Wrecclesham, Farnham, Surrey.

ARCHITECT'S Assistant desires engagement; seven years' experience; working drawings, details, perspectives, good tracer, and colourist; good references; placed on Army Reserve.—Box 824.

BRICKWORK and Pointing wanted, new or old; good personal references; age 48 years; estimates submitted.—R. G. Balls, 26, Presburg Street, Clapton, N.E. 819

BUILDER'S Manager requires position; well up in supervision, estimating, quantities; ineligible.—R. F. W., 67, Uplands Road, Hornsey, N.

CIVIL Engineer or Contractor's Manager, over 20 years' experience on public works in England and Colonies, requires position in month's time. Experienced in all branches railways, waterworks, sewerage, dock and jetties, bridges, etc. Highest references.—Box 799.

CLERK of Works, completing two years' engagement with "Explosives Co.," desires job as Chief or Assistant on building staff of factory; good knowledge of building routine; age 28; married; attested and badged.—V. Hughes, "Netherby," Stowmarket. 834

CLERK of Works (ineligible), thoroughly competent, with 30 years' experience on public and private work, desires engagement; country preferred. First-class references.—C. W., 70, Richmond Road, Kingston-on-Thames. 830

CLERK, 21, ineligible; 35s.; prime cost, ledgers, time-sheets, accounts, typewriting, etc.—R., 4, Bessborough Place, S.W. 815

CONTRACTOR'S Manager or Confidential wants berth; experienced, capable, and energetic; draughtsman, quantity surveyor, and estimator; adaptable.—Box 811.

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GENERAL Foreman disengaged. Thoroughly experienced in fixing ironwork, ferro-concrete, etc. Highest references to past employers. Distance no object. Used to Government works, etc. Past military age.—Foreman, 40, Raleigh Road, Hornsey, N.

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GENERAL Foreman seeks re-engagement. Trade, carpenter; competent, reliable, and keen; town or country, latter preferred; first-class references.—J. T. S., 64, Portobello Road, Notting Hill, W.

GENERAL Working Foreman wants job; trade, bricklayer; good experience.—W. W. Spear, 25, Summers-town, Lower Tooting.

GENERAL Foreman, disengaged, aged 39 (ineligible); Carpenter and Joiner; just completed second Government contract; excellent references from London builders.—W. C. L., 102, Haig Road, Plaistow. 825

PLUMBING wanted (inside or out) by first-class workman. Labour and solder only preferred. Any quantity. Town or country. Low prices. Good references.—Plumber, 33, Coburg Road, Old Kent Road, S.E.

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The object of the Professional Employment Committee is to provide temporary paid work for British architects who are entirely dependent upon their profession for their living, and whose present difficulties are due entirely to the war. Applications can only be considered from architects who are ineligible for military service and unable to obtain War work of a professional nature. Enquiries should be addressed to the Honorary Secretary of the Committee at 28, Bedford Square, London, W.C.

ARCHITECTURAL Draughtsman required as Designer for metalwork and woodwork.—Apply, stating full particulars of experience and salary required, Bromsgrove Guild, Bromsgrove, Worcestershire. 827

CLERK-DRAUGHTSMAN required in surveyor's office for correspondence and office routine, etc.—Write, with full particulars, stating salary, to Housekeeper, 29, New Bridge Street, E.C. 831

CLERKS of Works required in the Canterbury Royal Engineer Division. Applicants must have had good building or architectural experience and be over military age or hold exemption certificates. Pay nine shillings per diem.—Apply, personally or by letter, Division Officer, Royal Engineers, Canterbury. 829

JUNIOR Draughtsman required by firm of reinforced concrete engineers and contractors.—Applicants, bringing proofs of work done, should apply to Messrs. Peter Lind and Co., Parliament Mansions, Orchard Street, Victoria Street, Westminster. 832

WANTED immediately, Draughtsman (unfit for military service) for office of architect and surveyor.—Write, with full particulars, to X. Y. Z., "Western Morning News," Torquay.

WANTED, Traveller, to take orders all over United Kingdom; commission paid on receipt of orders; great demand; specified by more architects than any vent made; selected by War Department, L.C.C.—"Sanatorium Iron Air Brick," 58, Denmark Road, Southport. 782

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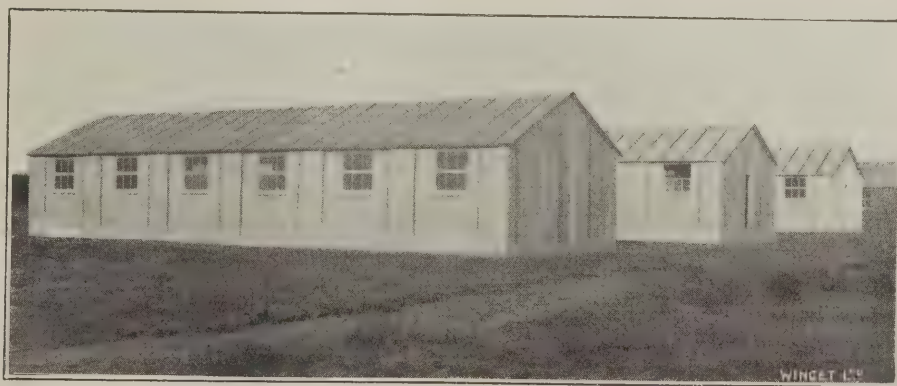
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NEWS ITEMS.

Rebuilding of Wargrave Church.

Wargrave Church, which was burned down on Whit Monday, 1914, has been rebuilt at a cost of over £13,000. July 22 has been fixed as the date of re-opening.

Sheffield Plumbers' Wages.

Sheffield Water Committee have resolved that, following an arrangement made between the local Master Plumbers' and Operative Plumbers' Associations, the wages of the Water Department plumbers be advanced by $\frac{3}{4}$ d. per hour as from June 5, with a further increase of $\frac{1}{2}$ d. per hour as from October 2, such advances to be granted as war bonuses and to extend to and terminate six months after the declaration of peace.

"Coatostone" for an Indian Palace.

"Coatostone" has been ordered by His Highness Maharajah Alwar for internal and external treatment at the Seriska Palace, India, and the same has been exported by the Stone Preservation Co., Ltd., of 9a, Little James Street, Gray's Inn, W.C., who have succeeded the Coatostone Decoration Co. and are now the sole proprietors and manufacturers of "Coatostone."

New South London Hospital for Women.

The builders are hard at work on the new South London Hospital for Women, on the south side of Clapham Common, which is to be opened by the Queen on July 4. The hospital has been built very simply, and none of the money needed for practical purposes has been spent on ornament. Georgian in style, of red brick and Portland stone, it fronts the common.

It was begun four years ago in response to a definite and increasing demand for a hospital for South London and the southern counties run and staffed by women. There is accommodation for eighty patients. There are four general wards, a children's ward, private wards, an isolation department, and also X-ray and pathological departments. The "Queen Mary Ward," which is completed except for its beds and medical equipment, is 70 ft. long by 26 ft. wide, and the windows allow for a perfect air current without draughts.

A Shakespeare Window.

To commemorate the tercentenary of Shakespeare, it has been arranged that the central window of the new Café (which forms part of the New Opera House scheme), in Torwood Street, Torquay, shall be a full length study of the poet and dramatist. The window has been designed by Mr. F. G. Moore, M.A. (the architect of the scheme), and will be executed by Messrs. William Morris and Son, Ltd., of Ruskin House, Rochester Row, Buckingham Gate, S.W. The general contractors are Messrs. R. F. Yeo and Sons, of Torquay.

Excavations at Dunfermline Abbey.

Further excavation operations in the nave of Dunfermline Abbey Church are said to confirm the theory of Mr. P. Macgregor Chalmers, architect, Glasgow, as to the site of St. Margaret's early church. The work is not yet completed, but it has been established that St. Margaret's Church stood on a site at the east end of the present nave of the Abbey Church and between the lines of the

Norman pillars. A shaped stone was dug out between two of the pillars on the north side. This stone proved to be a Saxon capital showing the early form of the cushion capital. It is well preserved.

Kinghorn Glass Works Extension.

At the Fife and Kinross Appeal Tribunal the chairman of a glass-blowing establishment at Kinghorn said they were extending their premises, at a cost of £13,000, so that they might produce articles that formerly were made in Germany. Temporary exemption was granted to the manager.

The Italian War Exhibition.

Thursday, June 22, is the date now arranged for the opening of the exhibition of war pictures and cartoons by Italian artists at the Leicester Galleries. In addition to the series of paintings of the Italian war zone by the famous artist Ludovico Pogliaghi, who went to the Alps with the direct authority of the Government, there will be shown, for the first time in England, a collection of original drawings by Galantara (sometimes known as Rata Langa), whose influence as a cartoonist is so widespread in Italy that he has for long been recognised as a strong political force and a valuable asset to the cause of the Allies. Another artist whose work will arouse enthusiasm among the discriminating is Sacchetti. His recent drawings of the German soldiery have a power which only the work of Forain can approach. Corbella, Sartorio, Bompari, Martini, Bonzagni, Oppo, and Terzian names familiar to every Italian—are also contributing to the exhibition.

("News Items" continued on page xviii.)

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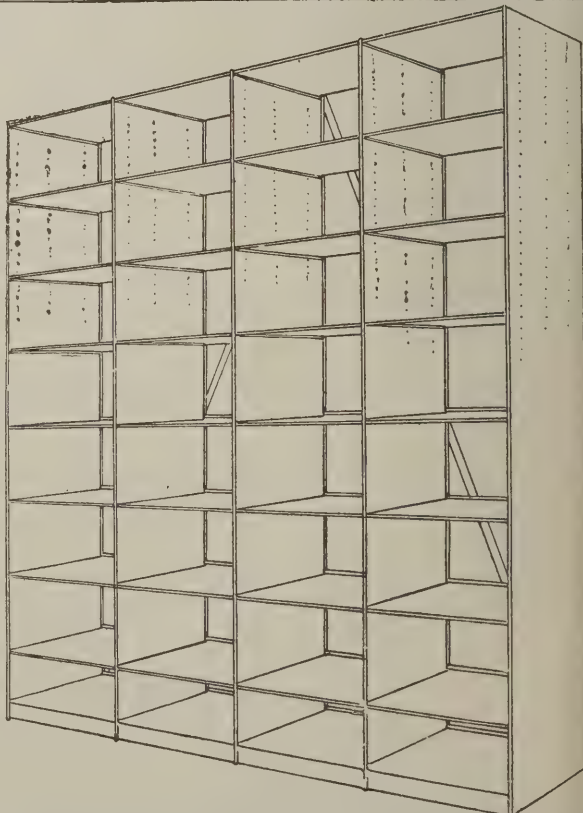
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THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, June 21, 1916.

Volume XLIII. No. 1120.



SIR ROWAND ANDERSON, LL.D., F.R.S.E., F.R.I.B.A.: ROYAL GOLD MEDALLIST, 1916.

(See page 261.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

JUNE 21, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1120.

EDITORIAL.

SIR ASTON WEBB, R.A., has rendered a twofold service to the community by giving evidence before the Parliamentary Committee on the Charing Cross Railway Bridge Bill, and by stating, in the "Observer" of June 11, the case for the opposition. In his opinion, the bridge and station are entirely unworthy of their position, and he urges that, while the appearance of the bridge cannot be improved by patching, the expenditure of £170,000 upon it will give it a new lease of life as an eyesore and an obstruction. For its ugliness is not its only vice. It blocks reform. Sir Aston holds—and in this he has a large following—that a new road bridge at this point is essential. Sir William Lever, who also tendered evidence to the committee, gave the railway company a glimpse of real business economy, of the kind that looks well ahead. He said that, regarding the matter merely as a business proposition, it was a serious mistake to spend money on this worn-out anachronism. Now is the time to acquire land on the south side of the river. A few years hence the cost may be vastly increased. Evidently he agrees with those who think that the station should be built on the southern side, and a road bridge substituted for the railway bridge. He supported this view with a practical and forcible argument. The congestion of traffic in London, he declared, is accountable for the extraordinarily high rates for cartage in London, which are at least three times dearer than in any other town in the kingdom. This is the kind of argument to which more prominence should be given. It flatters the Londoners' illusion that they are practical-minded men. They are nothing of the kind; but it is a human weakness to pride ourselves on our least observable virtues; and the Londoner's insistent claim to practical-mindedness is about as well founded as the Hun's claim to loving-kindness.

Another effective weapon—that of ridicule—was deftly wielded by Mr. John Burns, than whom no one is more skilful in its use. He knows the driving force that resides in the proverb, "Give a dog a bad name." Give a bridge a bad name and scrap it. But the bad name should be neat and apt, and Mr. Burns's "ugly red-oxide Behemoth that sprawls from north to south," though effective as rhetoric, is too clumsy for a catchphrase, the more's the pity. Mr. Burns said that if the Bill were postponed for two or three years, he and others would do all in their power to get the various authorities concerned to consider an alternative scheme. He suggested that the London County Council should at once co-operate in devising a new road-bridge to take the place of the railway bridge, and a new station for the Surrey side. It is popularly supposed that Mr. Burns originated the idea of transferring the station, but we think he was anticipated by one or more of the multitudinous authors of the graphic

schemes that a few years ago were the favourite exercise of all who could draw and of some who could not. While, as a matter of town-planning, the shifting of the terminus is a fascinating idea, the proposal rather frightens the general public, who—of course quite erroneously—fear that it involves a sacrifice of convenience to idealism; and it is easier to work upon their fears of immediate loss than to convert men to the broader view of ultimate advantage. Educating the public is a slow process, but we need not therefore despair of its accomplishment.

Towards this enlightenment of the public mind, Mr. C. Lewis Hind made a notable contribution in last Friday's "Daily Chronicle." Mr. Hind cites, with an admiration which we all share, Mr. T. Raffles Davison's fine scheme for "the removal of Charing Cross Station to the south side of the river; the scrapping of the hideous railway bridge, a huge blot on the finest vista in London; the making of an imposing processional road sweeping majestically round from the Mall, joined by a noble north-to-south thoroughfare, and crossing the river on a magnificent stone bridge of one clear span, a great Empire bridge, leading from Empire Place on the Embankment to an Imperial Senate House built up in isolated grandeur on the south side of the river, which is now given up to barges, sheds, and mud." In Empire Place, a consecrated spot, set on a little hill, where Northumberland Avenue, rising between the two Embankment Gardens (one is yet to be extended), merges into the new bridge, Mr. Hind would build "a Chapel, small but high, very simple, but very beautiful, dedicated to the Fallen who have died for their country." It is a glorious vision, and Mr. Hind thinks it can be realised; for "who does not mourn a soldier or sailor, and who would not be willing to join in this testimony of love and gratitude?" For seven years we are all to give on Empire Day a guinea a head towards this object. We must confess that we have greater hopes for the project than for Mr. Hind's suggested method of raising the funds, though we admire the largeness of his faith.

Like our contemporary the "Daily Mail," we "make no apology for repeatedly calling attention to the enemy's far-sighted and practical plans for the War After the War." That in adopting this course we are not merely following in the wake of the daily Press our readers are well aware. We were among the first to insist—and we have done it with almost wearisome reiteration—upon the vital necessity for preparing in every possible way for the industrial and commercial struggle in which Germany has already been, and will be again, our most deadly antagonist; and we conceive it to be a duty to spread the news that "a national league of all the engineering brains of Germany" has

been organised for the avowed purpose of "confronting the great new tasks which the present era conjures up." Sixty thousand steel-and-iron engineers, architects, designers, builders, chemists, electrical engineers, and marine architects, comprising six already great national societies, have decided to co-operate. Our contemporary adds: "British engineers have nothing to fear from German competitors in the field of sheer brain-power, but we believe it will be acknowledged that in the source of that power—namely, a scientific State-encouraged system of technical education—we have something to learn from our enemy."

With this we are in entire agreement. Indeed, we have urged the same contention repeatedly, and almost in the same words. It is a mere truism that the neglect of scientific co-ordination in this field is the main cause of this country's being outdistanced by Germany in trade and commerce. We have to pool our resources and pull together; and the only way to avoid overlapping, petty jealousies, divided aims, and other enervating and retarding influences, is to mobilise nationally, and to work with all the unanimity and all the self-sacrificing energy that the stress of national necessity never fails to excite. But, in the case of industry and commerce, the gravity of the situation is hardly yet realised with sufficient vividness by the general public, and a campaign of enlightenment should be immediately set on foot.

A pamphlet that has been issued by the "Council of Loyal British Subjects of German, Austrian, or Hungarian Birth," is in effect a clear and dispassionate statement of the case for the Allies. If the main object of these gentlemen is to justify their attitude towards the countries of their birth, and to express and explain their sympathy with the country of their adoption, it must be admitted that they could have employed no other equally effective means, and it is not their fault if the process involves an indictment of their native countries. A terrible indictment it is—all the more impressive for the moderation and restraint with which it is set forth. "In the face of overwhelming evidence to the contrary," the writer of the pamphlet declares, "German statesmen and German newspapers have the audacity to maintain that the war is the result of a carefully designed conspiracy on the part of England to rid herself of an inconvenient trade rival." This grotesquely absurd lie is sincerely believed by most Germans, and is sedulously propagated among neutrals, for whom its emphatic contradiction in a manifesto from Germans and Austrians should be a wholesome corrective.

It is, however, on the subject of commercial rivalry that we would rather dwell. Very ably the pamphleteer—Mr. August Cohn, of the Middle Temple, barrister-at-law—refutes what we may be pardoned for calling the absolutely idiotic and grossly wicked slander that our Government "deliberately engineered a war (and had the support of the public in the adventure) for the purpose of destroying the rival," and he recalls how our Government Departments and municipal corporations, "so far from exhibiting any signs of jealousy of the industrial progress of Germany, . . . have favoured German industries to the detriment of British manufacturers. It is no secret that in recent years huge undertakings, involving millions of money—both here and in the Colonies—have been entrusted to German firms, and that neither jealousy of Germany's financial gain nor a fear that Germany might abuse local knowledge thus acquired in directions prejudicial to the safety of the realm was allowed to affect what were regarded as purely commercial relations between

two friendly nations." This is only too true; but this country's blind trustfulness with respect to Germany has gone for ever.

The easy-going Briton did not recognise the extent to which the Government and the corporations were playing into the hands of the enemy, because he was constitutionally unable to conceive that Germany was capable of deliberately plotting the ruin of this country—had been for years cherishing that object as a sort of devilish religion, and was systematically adopting incredibly mean, dishonest, and treacherous methods of furthering it. Suspicion haunts the guilty mind; and, on their part, the Germans are simply incapable of crediting other races with motives or policy less base than their own. It is the notion of the criminal, who is always firmly convinced that all other persons would be just as wicked, or even more so, if they were only clever enough. Jealousy of his superior gifts has brought him into trouble, and in the dock he is wont to assume an air of injured innocence; in all which respects the German nation is true to type. Its own vast and insidious preparations for the coming commercial war are wise and commendable; our defensive measures are proof positive of a wicked desire to starve and crush the German nation. What the Germans think about us does not matter; but it is necessary, we fear, to convince certain sluggish British traders, commercial men, and workers, that, in spite of the villainous example and the vile slanders made in Germany, commercial prosperity does not necessarily imply the lust of conquest. It means power, however, and that power we must have if we are to retain the strength to resist the abuse of power by morally inferior nations. *A fortiori*, we may desire to correct the tendency of immoral countries to wax fat and kick, but we have no other reason for wishing to cripple their commerce. We should even rejoice in their prosperity if they had not demonstrated their propensity for adapting it to evil ends. Among our traders, therefore, who are inclined to be half-hearted with respect to the coming war, there should be no "conscientious objectors," and especially no shirkers.

ARCHITECTS AND SURVEYORS AND THE MILITARY SERVICE ACT.

THOSE of our readers who are liable to be called up at immediate notice under the Military Service Act will be interested to learn that arrangements have been made for the formation of a Company of Architects and Surveyors in connection with the 22nd (Res.) Battalion, King's Royal Rifle Corps. It need hardly be pointed out that it is of great advantage to recruits to be able to join a company composed of men of their own class, military life under such conditions being much more pleasant. Lieut. and Quartermaster H. G. James (with the permission of the Commanding Officer, Lieut.-Col. L. Whitehead) has the arrangements in hand, and readers desirous of joining the new company should communicate with him at Norfolk House, Laurence Pountney Hill, Cannon Street, London, E.C. It is necessary to make immediate application. The duties of the battalion are largely in connection with field engineering. The training ground is at Wimbledon.

Mr. Ernest Newton, A.R.A., president of the Royal Institute of British Architects, writes to say that from a letter he has received from his son, Mr. W. G. Newton, A.R.I.B.A., who is adjutant of the 23rd Battalion London Regiment, in France, he learns that the Commanding Officer "is very pleased to hear that married architects have been invited to enlist in this battalion, and that they may be sure of a hearty welcome should they come to France."

HERE AND THERE.

IT was my interjection that Sir John Soane was an architectural tattooer that drew my friend out in defence of him. "I believe," he said, "and am prepared to support the belief, that out of the desert waste of stupidities by the Inmans, Smirkes, and Bedfords of the day the work of Soane, of Alexander (I'm not speaking only of churches), and, perhaps, of Wilkins is about all that has permanent interest. Nash, as a scene-painter, stands apart, and Wyatt really belongs to an earlier date. Soane was very much like our modern fantastics—half his experiments didn't come off, but the stuff he did is alive, I think. But please note that my voice has cried in the wilderness about Hawksmoor for many years, and that I hope to live to see the day when we put him second to no one and when we prove that he actually designed most of the late Wren work, including St. Bride's steeple. Because with that god in my Olympia all the Soanes and Alexanders don't really interest me violently. But they are good." Well, as for Soane, it seems to me that the more one sees of his work (the Bank apart) the more it palls. I know he has been called "the most original architect of the eighteenth century," but the very fact that, as my friend admits, so many of his experiments "didn't come off" makes one tire of his originality. Those endless incised frets and parallels, and that medley of queer architecture within the house he built for himself in Lincoln's Inn Fields, put him at the opposite end of the scale to Cockerell, who may fairly be called the Admirable Crichton of Architecture; the work he did side by side with Soane's at the Bank of England declares him triumphantly to have been far the better architect, for about Cockerell's work there is a scholarly sweetness, whereas Soane's (excepting perhaps his umbrella ceilings) always has a look of frigid propriety. But though I am no zealous admirer of Sir John, it is a rare treat to see the many treasures that come down to us in his Museum. Apart from the Hogarths and those numerous other fine pictures and drawings—not forgetting the series by Clérissieu—there is the splendid library of old works on architecture and kindred subjects, and in one of the bookcases can be found eleven sumptuously-bound volumes containing Soane's lectures as Professor of the Royal Academy—for which he received ten guineas a lecture. These folios offer a gentlemanly example of script, and are fascinating to read. The matter they contain has never been published, and on that account it is of interest just now, when Mr. Swarbrick's new book has brought the Brothers once more into the public eye, to give the following excerpt setting forth Soane's opinion of Robert and James Adam. (Robert had been dead about ten years when these views were expressed, so there could be none of the resentment that was caused by Soane's disparaging comments on the work of his own contemporaries—a resentment which resulted in his lectures being suspended for two years.)

* * * *

Soane is tracing the development of English interior decoration. He gives expression to a fine contempt for all those Frenchy swirlings of the Louis XV. period that became a fashion in eighteenth-century England, swirlings especially objectionable to the Academy Professor of Architecture when they got translated from plaster and wood into *papier mâché*; but fortunately Stuart and Revett, "those great luminaries," arrived upon the scene fresh from Athens, and attention was directed from the flighty to the sublime. "But it is to the activity of the Messrs. Adam that we are more particularly indebted for breaking the talismanic charm, which the fashion of the day had imposed, and for the introduction, from ancient works,

of a light and fanciful style of decoration, better suited for private buildings and the elegance of modern refinement. This taste soon became general—everything was Adamatic; buildings and furniture of every description. But however adapted this style might be to internal embellishment, it was ill suited to external grandeur. The Messrs. Adam had not formed their taste on the best examples of antiquity, and therefore using the same style in public and private buildings, internally and externally, they did not retain the favourable opinion of the public to the extent expected. But if, in no instance, amongst the various opportunities afforded by their numerous and extensive works did they ever reach the sublimity of the great restorers of architecture, and if they did not sufficiently distinguish the difference of character between public and private works, at least they banished from the interior of our buildings the clumsy tabernacle frame, the heavy cornice, the ponderous entablature, and the monumental chimneypiece of Inigo Jones, Kent, Gibbs, and the whole train of their humble imitators; and if Mr. Adam occasionally, in his flights of fancy, descended to trifles, and gave an elegance and an importance to a Sedan chair, or to the keyhole of a lady's escritoire, let us, in candour and justice to departed merit, remember that in the preceding age the great historical portrait and landscape painter of his day, Kent—Kent the father of modern gardening, Kent who was respected for his architectural productions—was likewise consulted for designs for State coaches. City barges, and children's cradles; nay, he was so far the oracle of the day, the arbiter of taste, that the very petticoats of the ladies were under the dominion of the architect, and embroidered from his designs, whereof two are particularly mentioned by the late Lord Orford, the one decorated with the five Orders of Architecture, the other a copper-coloured satin with Roman ornaments worked in gold!"

* * * *

This last sentence offers a suggestion for architects at the present time, when, despite that official poster about "Bad Form in Dress," the purveyors of feminine fashions are doing as mightily well in War time as the shipping companies! It is a cardinal sin for the architect to tout, but in the exceptional conditions now prevailing the R.I.B.A. Council might shut the other eye while Fellow, Associate, or Licentiate sought for work after the manner that brought such kudos and fame to William Kent. I started out, however, to refer to Soane, and I will therefore conclude with these personal facts about him: He began life as the son of a bricklayer, and entered the profession of architecture by way of being errand boy to George Dance the younger; he practised for more than sixty years, forty-five of which were spent in the service of the Bank of England; his original name was Swan, which he changed to Soan, and then to Soane; he married the niece of a wealthy builder, to whose fortune he succeeded; and he had two sons, one of whom died in his thirties, while with the other he carried on a lifelong feud, and is said even to have declined a baronetcy in order that this son should not get anything of his inheritance. Rather an unpleasant fellow, old man Soane, who doubtless in his eighty odd years could look at one with a disinheriting frown that was exceedingly forbidding: and if one cares to read character in architectural expression, then we may discern in his designs and his executed work something of that same sour temperament and peevishness that made him an awkward man to get on with. There was nothing of Wren's geniality about Soane, and it was perhaps personal friction with some of his contemporaries that brought forth their attacks on the style of architecture he chose to adopt. The venom in these attacks has no effect on us to-day, but the substance of the criticism remains, and I for one would not pay great homage to an over-rated architect.

UBIQUE.



LONDON FAÇADES. X.—LINDSEY HOUSE, LINCOLN'S INN FIELDS.

(ATTRIBUTED TO INIGO JONES)



Photo: Thomas Lewis, Ltd.

MODERN DOMESTIC ARCHITECTURE (SERIES II.). XXXVI.—CHIMNEYPiece IN HALL, KENSINGTON
PALACE GARDENS, LONDON, W.

E. J. MAY. F.R.I.B.A.. ARCHITECT.

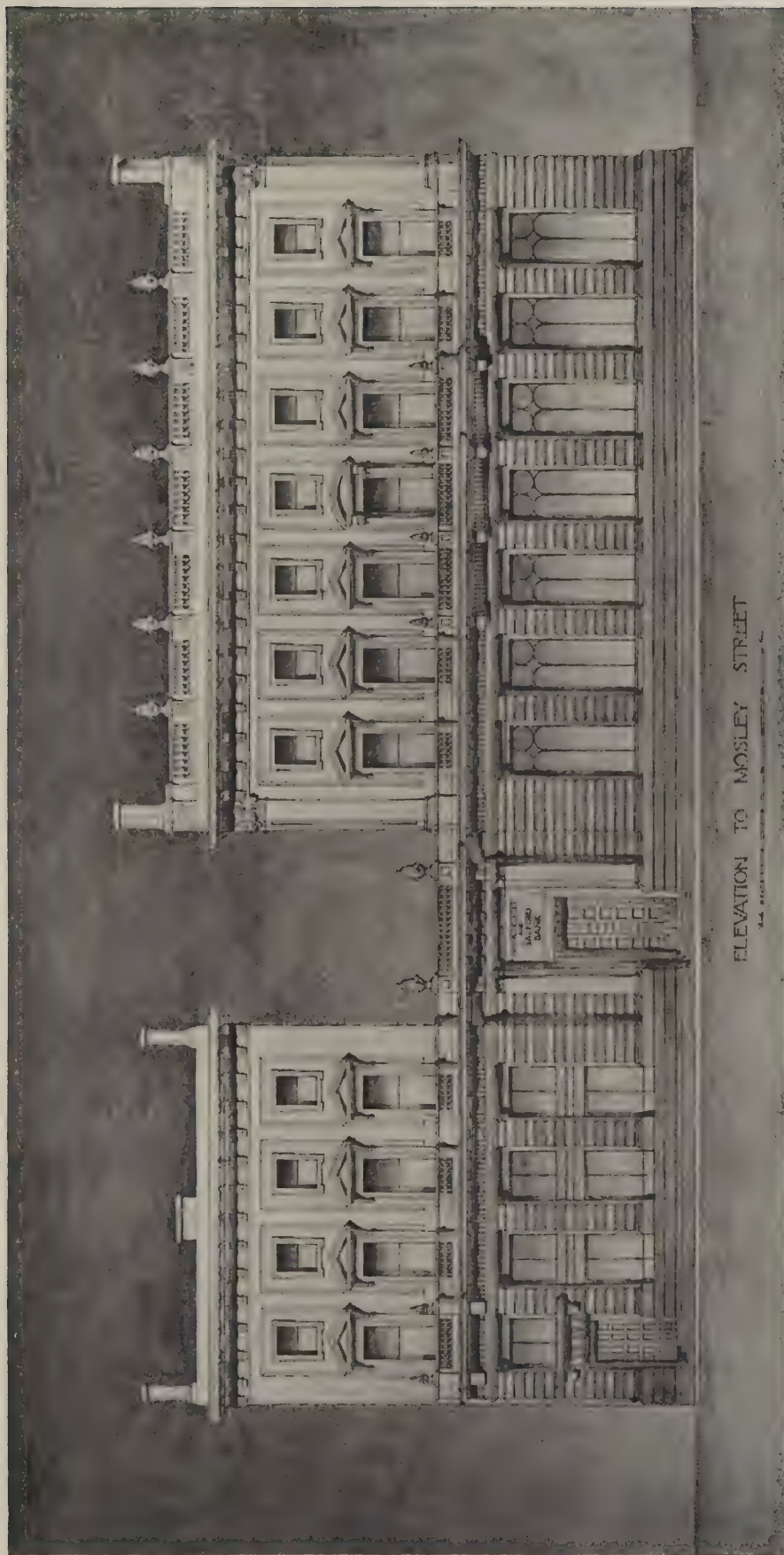


Detail of Ceiling in Chapel, Penrose Almshouses.



Detail of Ceiling, House in Cross Street.

DETAILS OF CRAFTSMANSHIP (SERIES II.). X.—PLASTERWORK AT BARNSTAPLE.



ELEVATION TO MOSLEY STREET

STUDENTS' DRAWINGS (SERIES II.). XXVII.—WILLIAMS DEACON'S BANK, MANCHESTER. EDWARD WALTERS, ARCHITECT.
 MEASURED AND DRAWN BY GORDON HEMM.

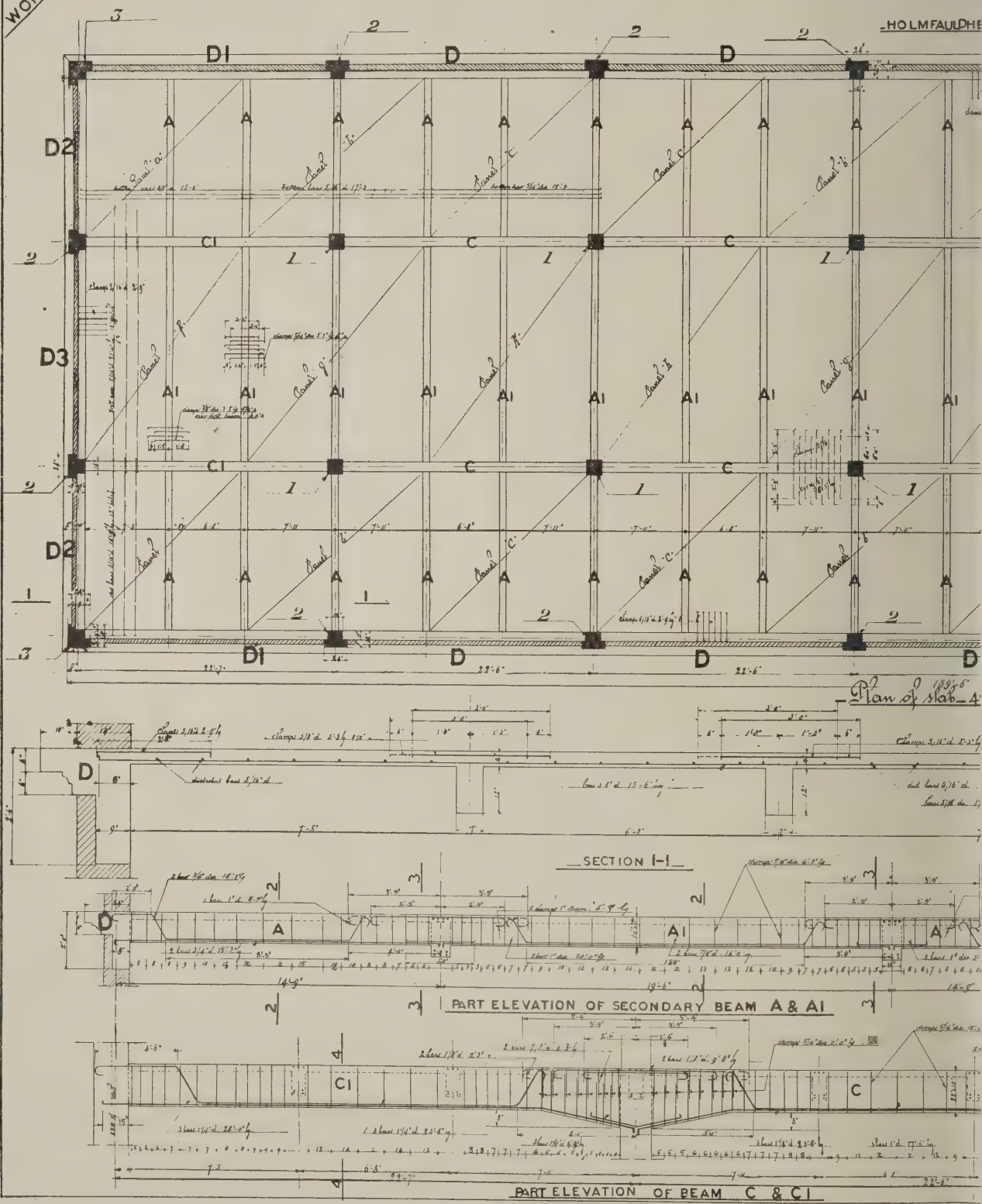
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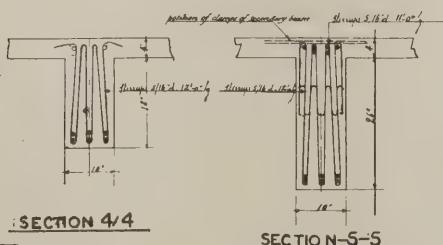
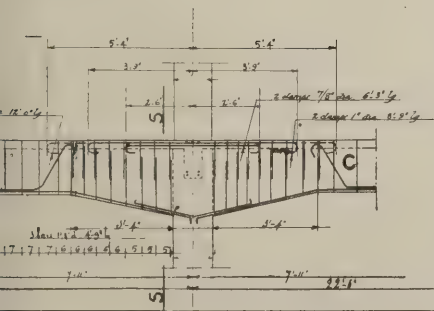
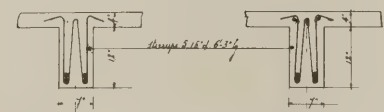
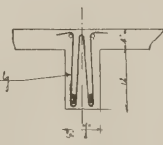
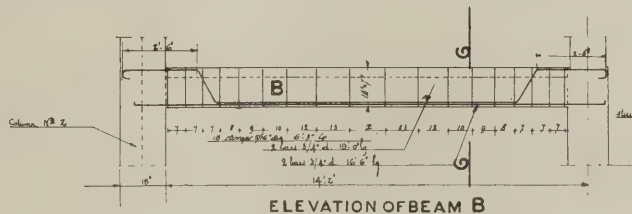
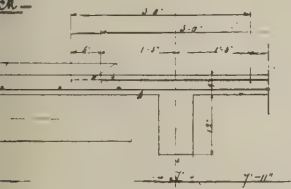
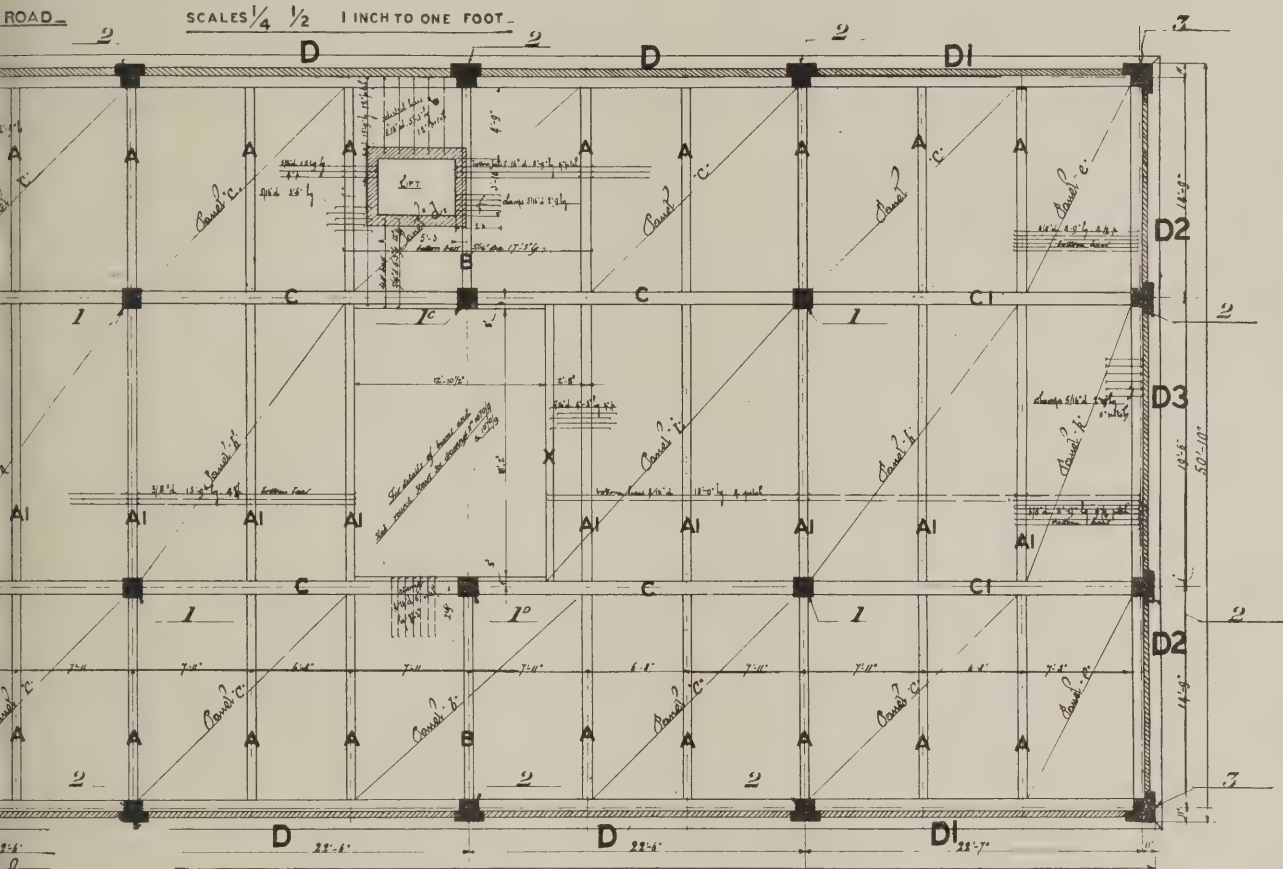
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R, ARCHITECT.

CORRESPONDENCE.

*American University Schools of Landscape Architecture.**To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.*

SIRS,—I should like to congratulate you on being (so far as I am aware) the first periodical dealing with architecture to call attention to the Harvard University Department of Landscape Architecture, so ably presided over by my friend Professor Pray, supported by the Elliot Professor, Mr. Fred Olmstead. To admit so generously as you have done that this work represents a "fine movement," and to accept the term "landscape architecture" in its American sense, without comment, must have required considerable courage, and shows a departure from the attitude ordinarily adopted by the architectural profession.

To have had your recognition also that the study of landscape architecture is a fine movement is clearly a step in the right direction, and one which, if developed in this country, might have far-reaching and beneficial results.

I have on many occasions had the pleasure of lecturing before the students at Harvard and several other Universities in America, and am at the present time preparing other lectures to be delivered in October and November of this year at every University in the States which possesses a faculty in landscape architecture, and I would therefore like to emphasise the very excellent work they are doing, and to recommend any one who proposes to follow "the great art" to take advantage of the training which these departments offer. I have already had in my office two very able assistants, who were trained at Cornell, and I suppose that until we think it worth our while to establish a department of landscape architecture in connection with one of our own Universities I shall continue to obtain expert assistance from these sources. It may seem unpatriotic, but what can one do?

This leads me to say that I have probably worked harder than most men to obtain some academic recognition of landscape architecture, and four years ago I almost succeeded. One of our youngest Universities, which already possesses a faculty in horticulture and agriculture, asked me to give them a report on the subject and to suggest a curriculum for a three years' course. This met with the hearty support of the Dean and faculty, who urged upon the Minister of Education the advisability of providing a suitable grant, but he pleaded that the country really could not afford it. Now that the war has proved that we are not so poor after all, I hope the next Minister of Education may take a different view! In advising a three years' course I had in mind three branches, or rather developments, of the profession, which the students could select, much in the same manner as they have for many years selected one of three courses for the Fellowship course of the Surveyors' Institution.

This would divide the post-graduate students into three groups:—

(1) Those graduates who could not continue their studies might take up practical surveying and landscape gardening. Such men would have been exceedingly useful to those architects who design both house and garden, and also to borough engineers engaged on the lay-out of public parks or gardens.

(2) Men prepared to continue their studies for an additional two years, and wishing to practise as town planners, might take the course open at Liverpool University or London University.

(3) Those wishing to follow the profession of architecture and landscape architecture combined might take the course in architecture at the London, Manchester, or Liverpool Universities, or in Paris at the Ecole des Beaux-Arts.

I assume, of course, that a certain number of bur-

saries tenable at one of these schools would be founded, which would carry their owners through these courses.

In conclusion, I would like to express my keen disappointment that nothing has been done in this direction, and my firm conviction that unless we make good this deficiency in training, the practice of landscape architecture, with its world-wide possibilities, will be controlled and directed from America. Already we have seen some proof of this in the new Australian capital planned by Mr. Griffith, of Chicago, and in Ottawa, which is being replanned by Mr. Bennett, also of Chicago, both expert landscape architects and city planners.

THOMAS H. MAWSON.

Lecturer on Landscape Design, Department of Civic Design, Liverpool University.

THE PLATES.

Lindsey House, Lincoln's Inn Fields.

WHILE the date of the erection of this house—1640—is established beyond question, it is not equally certain who was the architect, though the attribution to Inigo Jones, made chiefly on the strength of statements by Colin Campbell and Ralph, seems to be reasonable: the façade certainly presents the marked character of Inigo Jones's work. The exterior is of stone and brick, with a portion of the cornice in wood, but its original appearance was long ago altered by the coat of painted stucco that still remains. A fine scale is imparted by the six Ionic pilasters embracing the first and second floors. According to the elevation given in "Vitruvius Britannicus," the central pediment originally carried a female bust, and the windows then finished on a level with the bases of the pilasters: the second-floor sills, too, were all in line with one another. Relics of the house as it first stood are the two splendid brick piers with vases at the corners of the forecourt. When built as a good seventeenth-century town house, there was a central doorway leading into a large hall, at the rear of which was a well-staircase, but in the middle of the eighteenth-century the house was divided into two, a double entrance being formed, a party wall carried up through the centre of the building, and two new staircases substituted for the one in the original house. Isaac Ware appears to have been the architect for these alterations.

Chimneypiece in Hall, Kensington Palace Gardens.

Mr. May's chimneypiece is all of stone. It is in one of the houses in Kensington Palace Gardens which the late Mr. William Willett built.

Plasterwork at Barnstaple.

These two examples of old plasterwork—dating probably from the early seventeenth century—are interesting to study inasmuch as they show the art of the craftsman before his freedom and fancy became restricted. The detail of the ceiling in the chapel of Penrose Almshouses is especially pleasing.

Williams Deacon's Bank, Manchester.

Following the erection of the Free Trade Hall, Manchester, by Edward Walters, came the commission for the Manchester and Salford Bank (now Williams Deacon's Bank) in Mosley Street. The design of this building is masterly in every regard, the gigantic doorway connecting the two blocks in Mosley Street forming a monumental composition which is not excelled by anything of the kind in the north of England. The work was completed about 1858.

Reinforced Concrete Work in a Glasgow Shipbuilders' Office.

This is described in the article on page 262.

CHARING CROSS BRIDGE.

Sir Aston Webb, R.A., in the "Observer" of June 11, summarises the history of Charing Cross Bridge, and brings the account up to date with a narration of the proceedings before the Parliamentary Committee. In spite of all that has been said and written about Charing Cross Railway Bridge, Sir Aston writes, there seems still a great deal of uncertainty in the public mind respecting it. It was in 1859 that a proposal was put forward to make a railway bridge on the line of the old Hungerford Suspension Bridge and converting the old Hungerford Market into Charing Cross Railway Station. The proposal was approved, the old suspension bridge was removed and re-erected at Clifton, and the two large brick piers forming part of the railway bridge are all that remains of the Hungerford Suspension Bridge.

The railway bridge was designed by Sir John Hawkshaw, cheapness apparently being its chief recommendation, and when the bridge and station were completed it was at once realised what an eyesore had been placed on London's beautiful river. Nevertheless, in 1882 the widening of the bridge was approved on a similar pattern but of a stronger construction, and in 1900 powers were obtained for further widening of the bridge by four lines. These powers have not been exercised, but in 1905 the unsightly station roof fell down, and this year the company has applied to Parliament for powers to strengthen the older portion of the bridge at a cost of some £170,000. Cheapness, as usual, has not proved economical in this case, yet the great recommendation put forward for the present proposal is cheapness.

There appeared to be no urgency in the matter, for the Chairman of the company told his shareholders that nothing would be done till after the war.

The Bill came before the House of Lords this spring, and was referred to a Committee of the House, with the Marquis of Bristol as Chairman, the House of Lords passing a resolution, moved by Lord Plymouth, that it be an instruction to the Committee to take into consideration the requirements of the traffic over the river at this point and the effect that this Bill, if passed, will have upon it, and to hear evidence from the Royal Institute of British Architects, the London Society, and others on the treatment generally of this very important part of London.

This Committee has just held its inquiry; the Bill was opposed, amongst others, by the Port of London Authority, the London County Council, and, under the instruction to the Committee, by the Royal Institute of British Architects and the London Society. The case for the company was that the old bridge required strengthening in order to allow of an increased traffic, while the L.C.C. and others asked that the powers be not given until a reasonable time had been allowed for the responsible bodies to bring forward an alternative scheme.

It was explained by the engineer to the company that the strengthening of the old half of the bridge was to be carried out by propping it up from the underside, and large drawings were exhibited showing the result of this treatment on the appearance of the bridge.

The principal witness for further consideration was Mr. John Burns, who said he looked upon the bridge and station as an abomination which should never have been permitted, and that he thought everyone, including the company, would welcome its disappearance to the Southern

side. His view was that we ought to have a new station on the Surrey side, with a new vehicular bridge of the finest description connecting the North with the Surrey side, and that the L.C.C., the two adjoining Borough Councils, and possibly the City Corporation, ought to co-operate in providing it, and whilst carrying out a great public improvement, not to the company's detriment but for the benefit of London as a whole, the Thames might be relieved of that ugly red oxide Behemoth that sprawls from North to South. If the Bill was postponed for two or three years he and others, he said, would do all in their power to get the various authorities concerned to consider their attitude towards an alternative to this bridge, and suggested that the L.C.C. should co-operate with the railway company at once in devising a more excellent way of a bridge here and a station on the Surrey side.

Another witness, Mr. Andrew Taylor, Chairman of the Improvements Committee of the L.C.C., said that while, of course, he could not pledge his Council, his Improvements Committee and the Council were unanimous—there being no dissentient vote—in deciding to oppose this Bill, and therefore he would take it upon himself to bring the matter forward, so that he might get authority to communicate with all the bodies concerned, together, he hoped also, with the Government and the railway company itself. All he asked was that he should have a reasonable time after the war to bring their scheme to a focus.

A third witness, Sir William H. Lever, said he felt merely as a business proposition it was an entire mistake to spend money on the Charing Cross Bridge, not only from the point of view of the public, but also of the railway company. Land on the South side of the river is bound to become more and more valuable and more difficult to acquire. The proper and economical way is for the company to acquire it at once. He was perfectly certain that it is impossible to have an adequate station for Continental traffic on the restricted site of four acres at Charing Cross, and in his opinion we were quite behindhand in station accommodation in this country. He felt that any money spent, large or small, in patching up the present bridge was practically futile. In his view, it was essential to have another road bridge at this point. The congestion of traffic in London is accountable for the extraordinarily high rates for cartage in London, which are at least three times that of the dearest town he knew of.

The only other witness called under the instruction was myself [Sir Aston Webb], though we had in attendance, and would have liked to call on the traffic and other requirements Mr. Paul Waterhouse, who has made a speciality of this matter, also Professor Beresford Pite, and Mr. Leonard Stokes, on behalf of the Westminster Borough Council.

Mr. Paul Waterhouse considers the removal of the station and bridge inevitable, and that the congested state of the existing road bridges demands a vehicular and foot traffic bridge at this point.

Professor Pite, of the Royal College of Art, holds similar views. He considers that any money spent upon rendering permanent a structure which prevents the economic development of the South side is money badly spent.

In his opinion the bridge discredits its unique position, is an architectural disgrace to London, and does no honour to engineering design.

In my own evidence [Sir Aston con-

tinues] I urged similar views, that the bridge and station were entirely unworthy of their position, very unsightly and so poorly designed that the original station roof had fallen down, and a large sum is now asked for in order to strengthen one-half of the bridge. It seems impossible to make anything worthy of the present structure by patching it, and it is certain that no worthy improvements can take place at this most important point if the present bridge is retained, as it certainly will be if a large sum of money is now expended upon it.

He gave it as his opinion that a new road bridge at this point is essential, and that it would be an immense advantage. The Chairman of the Committee said he thought they were all agreed upon that, and he did not think there could be any question about it, and Lord Grimthorpe, another member of the Committee, said: "I think we should all like to abolish the bridge if we could." A suggestion for a new bridge prepared by Mr. Niven and Mr. Raffles Davison can now be seen at the Royal Academy.

In the end, however, their Lordships passed the preamble of the Bill, and London is again threatened, unless it rouses itself at once with a renewed life, for this "oxide Behemoth" is a permanent hindrance to all improvement in this the very eye and centre of London. One wonders whether London as a whole will ever gain control over its own affairs. Here we have a shaky old railway bridge, condemned by the various authorities controlling the different interests of London, retained solely at the wish of a railway company. Sir Lionel Earle, the Permanent Secretary of the Office of Works, well put it when he said it is regrettable that Parliament does not give power to some authority to deal with these questions on the aesthetic side.

The Case for the Company.

Interviewed by a representative of "The Sunday Times," Mr. Tempest, one of the railway company's officials, said that the company proposes to abandon the widening for which sanction was obtained in 1900, which would cost £741,000, and to substitute a strengthening of the old bridge at a cost of £167,000. The method to be adopted is to uphold the cross girders by balanced cantilevers supported on piers placed between the existing pillars of the bridge. When complete the spars of the bridge will have an arched appearance. Except so far as the cantilevers project over the waterway the existing headway will be retained. In any case, the headway at the centre of each span will be 5 ft. higher and at the side 8 ft. 9 in. higher than that of Westminster Bridge.

Summarising the effect of the proposals he said: "They provide a remedy for the existing public inconvenience, interrupt neither railroad nor river traffic during construction, involve no further lateral occupation of the waterway, effect a saving of £575,000, and should the L.C.C. scheme hereafter materialise leave a smaller and less costly structure for them to deal with and not substantially increased in cost if the enormous outlay which the L.C.C. transfer scheme will involve is considered."

"Some scheme for dealing with the bridge must be adopted if the public are to be carried, as they have the right to be, with safety and punctuality, and it must not be overlooked that very large and increasing numbers of business and working men use Charing Cross Station and will do so still more after the war. To reject the present scheme would be to throw back the company upon their proposals of 1900-2."

HOUSING FOR OFFICERS' FAMILIES.

A Housing Association for Officers' Families has been formed, and its object is officially set forth as follows: To encourage the creation, adaptation, and administration, through the agency of "public utility societies" paying a limited dividend, or otherwise, of suitable groups of flats or houses for naval and military officers' widows and disabled officers and their families. (a) At rentals within the reach of very much reduced incomes. (b) With conditions which shall include an organised effort to solve economically the problems of domestic service, the provision of recreative facilities, etc. The chairman and hon. secretary is Mrs. Brinton, 38, Bryanston Square, W.

How is an officers' widow with one or two children to get on with an income of £200 or £300 a year? She is faced with the prospect of a small house at a rent relatively high to her income, of indifferent service—which is becoming more and more difficult to obtain—of uncongenial surroundings, and a perpetual struggle not to get into debt. It is a rather drab outlook, involving an endless vista of domestic worry.

The idea, therefore, of this Housing Association is to get rid of more than half these troubles by grouping such families together in specially designed blocks of flats, where there will be common dining-rooms, and where the worst terrors of "the servant difficulty" will be got rid of at a stroke. For this purpose a Public

Utility Society, called "Southwood Court, Ltd.," has been registered, and is in course of negotiating with Co-Partnership Trusts, Ltd., for the construction of a group of flats in the Hampstead Garden Suburb. It is estimated that this group will cost about £18,000, to be raised by the issue of loan stock at $3\frac{1}{2}$ per cent. interest. Of this sum £11,324 has already been raised.

The flats will be of varying sizes, and are expected to cost an average of £300 each to build. The smallest will consist of a living-room, bedroom, small combined kitchen and scullery, with a gas cooker, bath-room, and lavatory, large cupboard or box-room, and a small coal cellar. Other similar flats, but with two, three, or four bedrooms, will be provided. The rentals will range between 8s. 6d. and 18s. 6d. a week, inclusive of rates and taxes.

THE NEW CUNARD BUILDING, LIVERPOOL.

The new building for the Cunard Company at the Pierhead, Liverpool—shown on this page—was formally opened last week. It stands between the head offices of the Royal Liver Insurance Co. and the Mersey Docks and Harbour Board—all three occupying the site of the old George's Dock. Work on the building was commenced in December, 1912. The main façade is nearly 200 ft. in length, the height from sub-basement level being 125 ft. Portland stone is used for the exterior, covering a reinforced concrete frame. In general style the design of the façade is based on the Farnese Palace at

Rome. Messrs. Willink and Thicknesse, of Liverpool, and Messrs. Mewès and Davis, of London, were the joint architects, and Messrs. W. Cubitt and Co., of London, were the general contractors. A plan of the building was given in our issue for January 27, 1915.

THE ROYAL GOLD MEDALLIST, 1916.

For the first time since the Royal Gold Medal for Architecture was instituted by Queen Victoria, sixty-eight years ago, the honour has been awarded to an architect beyond the Border. It was presented to Sir R. Rowand Anderson, F.R.I.B.A., of Edinburgh, at a general meeting of the Royal Institute of British Architects on Monday, June 19. The President, Mr. Ernest Newton, A.R.A., delivered an address on the career and professional achievements of the medallist and handed the medal to the Lord Provost of Edinburgh, Sir Robert Inches, who kindly made the journey to London on behalf of Sir Rowand Anderson, who is incapacitated by illness. An address of thanks, prepared by Sir Rowand, was read on his behalf by Mr. A. Lorne Campbell, past-president of the Edinburgh Architectural Association. Sir Rowand Anderson, who is in his eighty-third year, has had a professional career of unbroken distinction and success. The McEwan Hall of the University of Edinburgh is probably his best known work. He has also rendered invaluable service to the cause of architectural education in Scotland.



THE NEW CUNARD BUILDING, PIERHEAD, LIVERPOOL.

WILLINK AND THICKNESSE, AND MEWÈS AND DAVIS, ASSOCIATED ARCHITECTS.

CONCRETE AND STEEL SECTION

(MONTHLY.)

NEW SHIPBUILDERS' OFFICES, GLASGOW.

These were designed by the company's own architectural staff, under the direction of Mr. F. G. Orr. The building, which is part of an extensive alteration in the lay-out of the shipbuilding yard, comprising buildings for painter, plumber, caulker, carpenter, and rivet stores, a large weighbridge, commissionaire's box, time office, workmen's covered entrances, etc., is a complete reinforced concrete skeleton, three storeys high, its horizontal dimensions being 159 ft. 6 in. by 50 ft. 10 in. An entirely new feature is introduced in this building by exposing the concrete wall columns in the external elevation. For better architectural effect, these have been made wider than was necessary for structural purposes, and are shaped with sunk panels in the face. The filling-in walls between the columns are of brickwork, and are divided by a stringcourse at the first-floor level, which is formed by projecting the floor-slab through the brickwork to the outer face of the column. At the second-floor level the brick panels continue uninterrupted in front of the lintel beams. The lintel beam at the roof level is enlarged to form a heavy moulded cornice, and above this the columns are continued as projecting

pilasters, with an iron parapet fence fixed between. Special shuttering was used for casting the columns, with the object, wherever possible, of avoiding joints in the boards which show on the face of the concrete when the boarding is struck. Immediately the centering of the columns was struck, they were washed with cement grout and rubbed simultaneously with sandstone, producing a neat surface finish.

Part of the moulded cornice was cast in wood moulds in the same manner as the columns. For the remainder of the cornice, the face-moulding was formed in a plaster-cast run on roughly-shaped supporting timber. The two methods of executing the moulds for the cornice were adopted by the contractor with the object of obtaining a comparison of the respective costs. There is therefore no skin of plaster, which is always liable to peel owing to shrinkage and frost. It may be justly said that this is a building which gives a true expression of its construction in the external appearance, with a pleasing architectural effect.

Stone from a local quarry was used for the main entrance; the retaining walls are in brickwork surmounted by a concrete plinth course, and the front and side elevations are faced with "Nori" bricks supplied by the Accrington Brick and Tile Company. Steel window frames are fitted in the technical departments, and else-

where "Austral" windows have been adopted.

The faces of the internal columns and the projecting floor beams have been finished by the same treatment described for the outer columns. No special treatment was applied to the ceilings of the slabs between the beams, which are left as the centering was struck, but these and the columns and beams were all finally finished with a coating of distemper.

Internally, the decorative woodwork throughout is mahogany and oak. In the private rooms and board-rooms the walls and ceilings are relieved with panelled plaster-work. Some of the panelling was taken from a house designed by Robert Adam. Heavy cork linoleum, terrazzo and parquet are used for the various floor surfaces. The main roof is covered with asphalt three-quarters of an inch thick. A large passenger lift has been installed.

Messrs. The Considère Construction Company, Ltd., 5, Victoria Street, Westminster, designed the reinforced-concrete work, the general contractors being Messrs. Melville, Dundas, and Whitson, Glasgow. Messrs. Alex. Stephen and Sons, Ltd., the building owners, themselves executed the plumber-work, painter-work, hardwood joinery, electric lighting and wiring generally.



Photo: Bedford Lemere & Co.

DRAWING-OFFICE IN NEW BUILDING FOR ALEX. STEPHEN AND SONS, CLYDESIDE, GLASGOW.

F. G. ORR, ARCHITECT.



NEW BUILDING FOR ALEX. STEPHEN AND SONS, CLYDESIDE, GLASGOW.

F. G. ORR, ARCHITECT.

PRACTICAL POINTS IN REINFORCED CONCRETE DESIGN.

The computation of the various members of a structure so that the safe internal resistance will be equal to the external forces which are imposed may appear more complicated in reinforced concrete than in ordinary construction, but there is nothing mysterious in the problem. The laws governing these calculations (said Mr. T. B. Shore, of the Considère Construction Company, in a paper read before the Aberdeen Architectural Association) are not changed merely by the use of any special method or system of placing the reinforcement. The design must always be based on certain accepted theoretical assumptions, and fulfil all the requirements of mechanics as applied to structural work. The external forces must be computed much in the same way as for any other mode of construction, and, moreover, the moments of these external forces cannot be controlled in any way once the loads and spans are definitely decided upon, although a perusal of many textbooks and some official regulations would lead one to believe that the ordinary laws of mechanics did not apply to reinforced concrete.

A building of reinforced concrete constructed in-situ is monolithic and elastic when set. Any series of spans of floors or beams are therefore continuous over supports. When loads are applied, even if it is only the dead weight of the structure itself, deflection, no matter how infinitesimal, takes place in the spans, and stresses due to what are termed the negative bending moments are therefore also developed over the points of support. These moments produce tensile forces which must be provided for, or cracks in the upper surface will develop at these points. For these reasons the only proper method of computing the bending moments is to apply the established theories for the

treatment of continuous girders, from which the bending moments, under any contingency of loading, can be accurately evaluated. The contingencies of loading producing the maximum bending moments in continuous girders are as follows:—

1. Maximum positive moment at the centre of the span: When one bay is fully loaded and the adjoining bays are entirely empty.

2. Maximum negative bending moments over point of support: When two adjoining bays are fully loaded and the next adjoining bays on either side of these are entirely empty.

3. Negative moments can also in some cases occur in the centre of the span when one bay is empty and the adjoining bays on each side are fully loaded.

Many designers entirely ignore these negative moments, although they should always be provided for, particularly where the structure has to carry moving loads of any magnitude.

Rectangular beams frequently occur in reinforced concrete construction, but mostly there are floor slabs connected to and spanning between the beams. In the latter case the beam becomes a T-beam, a certain width of the floor slab acting as the compression member of the beam. The precise width of the floor slab that may be assumed as acting with the beam for this purpose is a debatable point. In good practice, however, it is considered wise to limit the width of slab, which may be computed as resisting the compressive stresses to the least of the following:

- A. Two-thirds the distance of the spans between the adjoining beams.

- B. Fifteen times the thickness of the slab.

- C. One-third the span of the beam.

Concrete of the quality used for reinforced concrete work can usually be relied upon to give a minimum crushing resistance at three months of 2,400 lb. per sq. inch. The maximum permissible working stress on the concrete is therefore

taken at 600 lb. per sq. inch, which gives a minimum factor of safety of four. The working tensile value of mild steel may be taken at 16,000 lb. per sq. inch, which also gives an equivalent factor of safety to that adopted for the concrete.

With the use of high carbon steel of greater tensile strength than ordinary mild steel, it is much more difficult, and in some cases impossible, to design work so as to take advantage of the high tensile value of the steel without at the same time over-stressing the concrete in compression owing to the neutral axis being raised. The adhesion of the concrete to the steel is also more severely stressed and this may consequently become the weak spot in the structure. High tension steel is also very brittle. For these and other reasons mild steel is more frequently used, and I am of opinion that it will continue to be the steel most generally adopted for the reinforcing of concrete.

The problem of shear stresses in a reinforced concrete beam is a subject of endless discussion. In all beams, in addition to the tensile and compressive stresses, there are vertical and horizontal shear forces for which provision must be made. As the concrete alone is often insufficient to resist these forces, steel stirrups, or links, are introduced for this purpose. These stirrups also serve to connect and tie together the flanges, like the web of an ordinary steel girder. It is advisable, therefore, that such stirrups should be used throughout the whole length of the beam, even although not theoretically demanded. It is also apparent that the stirrups must reach well into and be properly anchored into the concrete forming the compression flange.

In a continuous beam the negative bending moments above the supports usually exceed in amount the maximum positive moment in the span, and the forces are reversed, so that, at this point, the upper surface of the beam is in tension and the lower in compression. For some little distance on each side of the supports, therefore, there is only the narrow section of the beam to resist the compression, and as the amount of this is equal and often greater than in the centre of the span, it will be obvious that the concrete alone is insufficient to give the requisite resistance. Steel must, therefore, be added to work in compression, or, as is more customary, the depth of the beam must be gently increased to form a flat gusset, so that the lever arm of the resistance moment is increased and the stresses reduced proportionately. Another method is to spirally armour the bottom portion of the beam on each side of support, by which means the compressive resistance of the concrete can be increased to equal the stresses imposed.

In columns the stresses are nearly always purely compressive, which concrete unreinforced is quite capable of withstanding. In cases where the loads to be carried are of any magnitude, the columns would occupy too much space were concrete alone to be used. In a column where concrete and steel are combined to jointly carry the load, the amount supported by each of the two materials is proportionate to the ratio of their moduli of elasticity, that is to say, the load that each carries is proportional to the amount that produces an equal reduction of length in the two materials. Although the modulus of elasticity of concrete has been assessed at varying values by different experimentalists, it is generally accepted that, for the purposes of calculation in reinforced concrete work, the modulus of elasticity of concrete may be taken as 1-15th of the modulus of

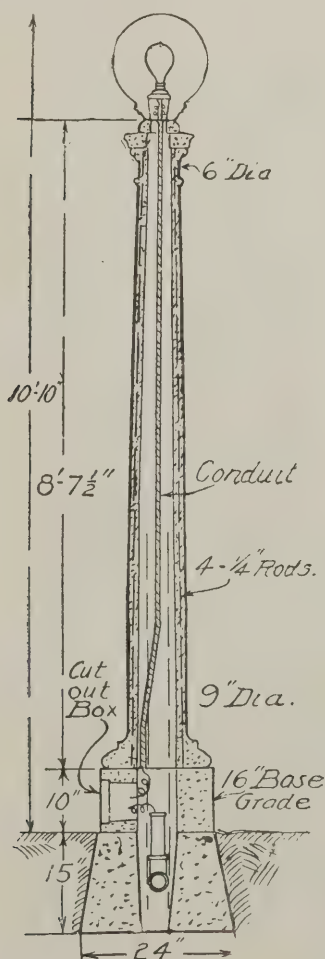
elasticity of steel. Therefore the load carried by each square inch of steel will be fifteen times that carried by each square inch of concrete. With a working stress of 600 lb. per square inch on the concrete, the maximum value that can be taken for the steel in compression will be 9,000 lb., or, say, four tons per sq. inch. This is little more than half the amount usually allowed on steel in ordinary constructions, and it is therefore uneconomical to use a large amount of steel in compression in reinforced concrete work.

In the early development of reinforced concrete it used to be a common practice for designers to calculate the steel in compression at seven to eight tons per sq. inch. Even now this practice is occasionally adhered to, although it is obviously wrong. Before the steel can actually work at seven tons per sq. inch the concrete must be stressed far above its safe limits.

The ordinary reinforcement of a column consists of four, or more, vertical rods placed near the outside of the concrete, with light horizontal ties, or links, spaced at regular intervals to prevent the bars bulging outwards. The longitudinal rods thus give lateral stiffness to the column, and also act in compression in the ratio previously explained.

A NEW METHOD OF MOULDING CONCRETE STANDARDS.

Concrete standards for light and power supply are extensively used abroad, and their adoption here on a similar scale seems likely to be only a matter of time. A new method of forming them is here



CONCRETE LIGHTING STANDARD MADE BY CENTRIFUGAL PROCESS.

described and illustrated. The principle involved is that of effecting proper compression by centrifugal action. As is evident, in revolving a wet mixture by this process the area of greatest compression is at the point of greatest radius. This affords the desired density in portions where it is most needed, resulting in a product with cored centre of great structural strength and stability.

The standards are formed with a 1:3 mixture, consisting of 1 part Portland cement and 3 parts clean washed sand and gravel. The aggregate is mixed with sufficient water to permit pouring into forms (of wood or metal), which are of the desired outline and dimensions, and made in two or more parts, as the exterior design may necessitate. The steel reinforcement is built up and placed in the mould, supported from the wall on a dead centre. When filled the forms are locked in a machine and revolved at a proper speed to compact the mixture, sustaining the wet concrete against the walls. The exact rotating speed depends upon the diameter of the post. In this operation all voids are filled, and the resultant produce has a hard, smooth surface that cannot be obtained by ordinary tamping. The preliminary set is obtained in about thirty minutes; the mould is then withdrawn and allowed to stand for twenty-four hours before removal. After this time the formed structure is capable of being handled without danger of injury to the surface. An additional curing in the open air, keeping the post thoroughly moistened, completes the process.

A sectional view of a typical post is shown. The shaft is reinforced with four 1/4-in. square twisted steel rods, equally spaced around the circumference and 3/4 in. from the outside. The rods are wired and held in place with No. 14 wire hoops. The standards have a hollow core, varying slightly for different types of design, but not less than 3 in., extending from end to end. This core is concentric with the outside surface of the post. The base and capital are cast separately under the centrifugal process. The former is provided with 4 in. by 4 in. by 6 in. cut-out box with concrete cover. Foundations for the standards are cast in place, reinforced with 3/8 in. twisted steel rods 5 ft. long at the centre, and the post is securely anchored to this footing.

The finished surface of these standards resembles cut or polished stone. The post, being hollow, is considerably lighter than a solid column, and at the same time is stronger. Tests for absorption show that the surface takes up less than one half the moisture absorbed by well-tamped concrete of the same mixture in the same time.

STEEL-FRAMED FIREPROOF MOTOR GARAGES.

A garage that is neat in appearance, fireproof, strong, and entirely weather-tight, that can be easily and quickly erected, be taken down and re-erected as often as desired without detriment to its components, and is comparatively inexpensive, meets a demand that arose with the introduction of motor traction and grows with the extension of that mode of locomotion. It is probable, indeed, that many persons are prevented from adopting motor traction because of the supposed difficulty of housing the vehicle, and they are specially deterred by the knowledge that a garage must be in the highest

degree fire-resisting. This condition, and all the essentials of efficient accommodation, are met by the Empire steel-framed fireproof motor garages, of which the patentees and manufacturers are Messrs. F. Pucillo and Co., 10, Scrubbs Lane, Willesden, N.W., who have issued a leaflet in which are described and illustrated the method of construction, materials, and advantages of their system.

In the Pucillo patent system, all the frame members and principals are formed of light steel channels, the various members being connected by means of interlocking joints. No bolts or rivets are needed, and the frame-members are standardised and therefore interchangeable. The walls are lined with cement-asbestos sheets, which are firmly held in position by light steel mouldings; the window frames, which have been specially designed for this type of structure, are of steel; the doors, which are British-made, are of well-seasoned timber; and the roof is covered with corrugated steel or cement-asbestos tiles. Two large doors extend over the entire width of the front, and this arrangement, while giving a safe clearance, gives an effective addition of light and air when work is being done on the car under cover. Windows provided in the sides and roof afford ample light and ventilation, and that part of the garage which is apportioned for use as a workshop for tyre repairs and the adjustment of small accessories is lighted by a larger window, and is fitted with a door giving direct access. The building, which can be very rapidly erected by unskilled labour, is perfectly weatherproof, and the air-space between the linings insulates the interior from the effects of the temperature without. The Empire garages can be made to accommodate any number of cars and can, of course, be finished to harmonise with their surroundings.

ENQUIRIES ANSWERED.

Thickness of Walls in Reinforced Concrete.

B. J. (Wrexham) writes: "What are the requirements, under the London County Council regulations, with respect to the thickness of reinforced concrete walls? Is there any annotated edition of these regulations?"

—A guide to these regulations, by Mr. Ewart S. Andrews, is published by B. T. Batsford, Ltd., 94, High Holborn. The chief rules as to thickness of walls are: Where the dead loads and superimposed loads are transmitted to the foundations, by pillars, etc., any external enclosing walls of reinforced concrete between such pillars may be of any thickness not less than 4 in. In any case where any wall or part of a wall is intended to support vertical loads or to resist lateral pressures, it shall be of such thickness as may be necessary to keep the stresses within the limits prescribed by the regulations for the construction of pillars, beams, and other members. When portions of the external walls between the reinforced concrete pillars and beams are constructed of brickwork, stonework, or plain concrete, such portions of walls shall be of a thickness not less than 8 1/2 in. for the topmost 20 ft. of their height, and not less than 13 in. for the remainder of their height below such topmost 20 ft.

When such portions are constructed of hollow blocks, the aggregate thickness, including any cavity, shall be at least 8 1/2 in., measured at right angles to the face of the wall.

A REINFORCED CONCRETE
TRESTLE.

We illustrate on this page the reinforced concrete highway trestle which the State Highway Commission of California have constructed across the Sacramento Valley. The highway was officially opened for service last month. It is more than three miles long, 20 ft. high, with a roadway 21 ft. in clear width, and is built with concrete piles, the floor being made up of four separate rows of slabs placed side by side. There are 2,940 piles and 3,665 slabs.

In constructing the highway the engineers had to plan a road which should not be interrupted at periods of flood, which often last for several weeks in the Sacramento Valley. It was necessary therefore that the roadway should be built above flood level and that it should not obstruct the flow of water down the channel.

The ground crossed by the trestle is a swamp of uniform character, so that it was possible to drive piles accurately and space the bents uniformly. The piles are 14 in. square with chamfered corners. There is a reinforcing rod at each corner and spiral hooping. The lower 5 ft. of the pile is tapered. Prior to driving the piles, numerous test borings and test piles were

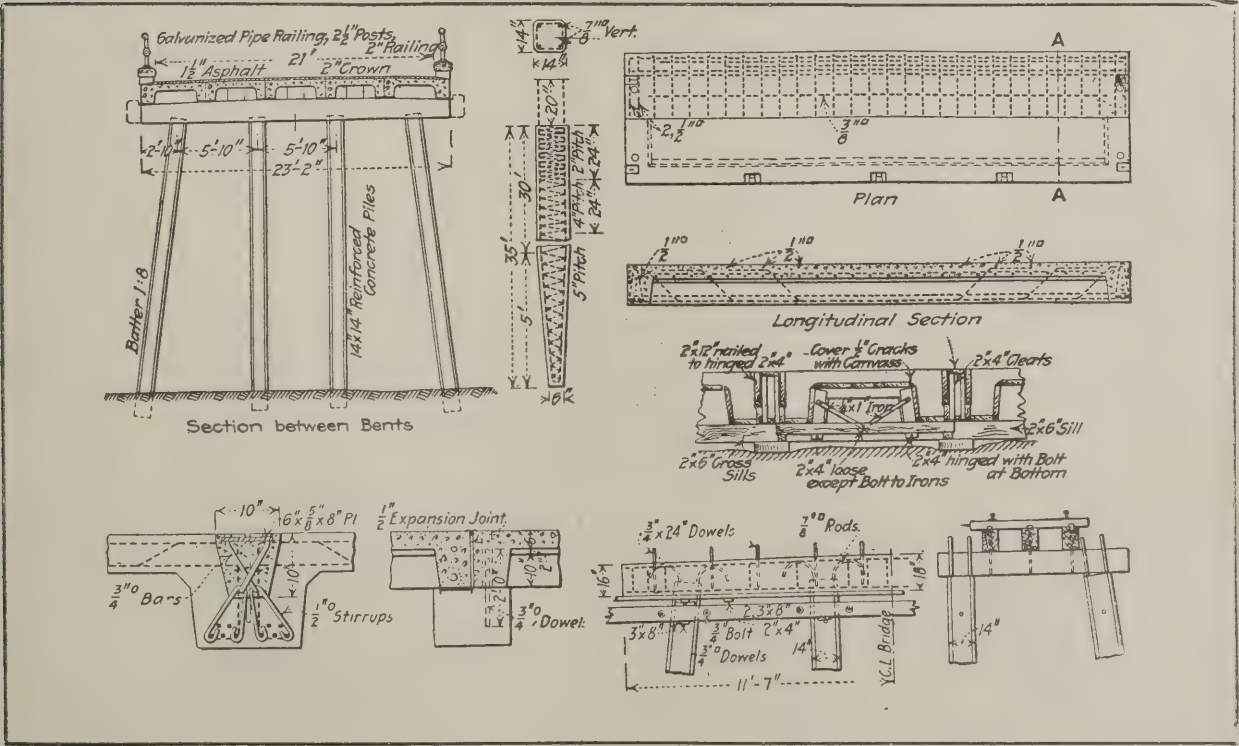
put down along the line of the trestle. An attempt was made to have all the concrete piles of such a length that they could be driven to the desired grade and afford a resistance to permit a safe loading of twenty tons each. Piles of five different lengths were cast, as follows: 32 ft. long, 860; 35 ft. long, 1,084; 40 ft. long, 524; 45 ft. long, 236; 50 ft. long, 220. By using these piles of varying lengths it was possible in most cases to drive a pile to the final grade desired and obtain the required resistance. The soil encountered was a mixture of sand and clay, with some adobe on top; it varied considerably in bearing power. The penetration under the final blow in some cases was as much as $\frac{1}{2}$ in.; but in others the last twenty or thirty blows lowered the pile only an inch, and in a very few cases it was necessary to cut off the piles.

The piledriver was 60 ft. high and was operated by a $8\frac{1}{2}$ in. by 10 in. hoisting engine with an auxiliary 35 h.p. boiler to supply sufficient steam to the hammer for hard driving. To carry the piledriver over the soft swamp during the dry weather 12 in. by 12 in. by 24 in. skids were laid directly on the ground with 2 in. by 6 in. greased skidways for the piledriver to slide on. During flood conditions, however, the method was different. A temporary wood trestle to carry the piledriver was driven ahead of the concrete trestle by a

small piledriver. The larger piledriver moved backwards after driving a concrete bent and pulled the temporary trestle.

There were four $\frac{3}{4}$ in. reinforcing rods in each concrete pile, and they were left projecting 20 in. above the head when the pile was cast, to make a proper bond with the concrete caps, which were later cast in place. These projecting rods necessitated special arrangements in driving the piles to avoid bending the rods. Immediately on top of the piles was placed a 4 in. fir block, or in case of the long piles two blocks, through which holes had been bored for the projecting rods. On top of this wooden block was placed a structural-steel head with a sliding cast block. Later a cast-steel head was used, holes being cored through it to admit the rods. On top of this cast-steel follower was placed a 14 in. by 14 in. block of Australian ironwood, to receive the blow of the hammer. This block, chamfered at the upper end and fitted with a cast-steel cap, shattered rapidly under the shock of the hammer, lasting from one to five days, or a maximum of about 100 piles driven.

With regard to the floor, as may be seen from the accompanying illustration, each slab has the general form of an inverted box. The floor is 6 in. in thickness, with projecting flanges of a total depth of 18 in. Great pains were taken in the design of the slabs and caps, so that the completed



REINFORCED CONCRETE TRESTLE, $\frac{3}{4}$ MILES LONG, ACROSS THE SACRAMENTO VALLEY, CALIFORNIA.

trestle should be a monolithic structure. Rods were left projecting from the top of the trestle caps, and 3 in. holes were bored in the floor slabs, so that as the latter were set they dropped over the rods. The holes were later filled with grout. At every third bay of the trestle an expansion joint was placed.

In casting the outside slabs for the floor a row of $1\frac{1}{2}$ in. holes 6 in. deep was cored in the slabs. After the slabs had been set, rods 12 in. long were inserted in these holes and grouted in place. These projecting dowels hold the parapet in place on the floor. The parapet is of simple form, 15 in. in height with arched openings. Besides acting as a curb, it supports a galvanized-pipe railing.

The wearing surface of the roadway is a layer of asphalt $1\frac{1}{2}$ ins. thick. The roadway has a 2 in. crown at the centre, this crown being formed by casting the trestle caps 2 in. higher at the centre than at the sides.

The unit system of construction adopted in building the trestle not only produced a permanent structure of uniform quality at low cost, but enabled the work to be carried out very rapidly.

LEGAL.

Builders' Claim for £97,000: The New Local Government Board Offices.

Spencer Santo and Co., Ltd., v. The Commissioners of H.M. Works and Public Buildings.

June 5-9. Official Referee's Court. Before Mr. Pollock.

The hearing of this case was resumed, being brought by the plaintiffs to recover £97,000, balance of contract price for building the new Local Government Office at Westminster (see our issues of May 17, 24, and 31).

Mr. Patten was further cross-examined by Sir R. Acland, K.C., as to the quality of the stone and the loss which the contractors alleged they had suffered from waste. According to the contract the builders were to be responsible for defective stone. The test for soundness was by tapping, but that was not an infallible test. A stone might be sound and true but when it came to be worked a vent might appear, and a stone which developed a vent in working was, the witness was understood to admit, regarded as the risk of the builder.

Sir R. Acland said that that disposed of the claim for bad stone supplied, because all the stones mentioned in the particulars had been worked.

Witness said that they did not have the opportunity of obtaining the proper stones as they were not allowed to select them. They did not even see the stone until it arrived at the yard.

The re-examination of this witness was postponed.

Mr. Francis Ruddle, the building manager for the plaintiffs, gave evidence as to the variations in the plans, the stone waste, and the delay in delivery of the materials. Speaking generally as to variations, the witness said that drawings were recalled for alteration after they had been delivered and in some cases that had happened after the work had actually been put in hand.

The examination of this witness occupied the court until Friday, the last day of the term and the twenty-second day of the hearing, after which the case stood adjourned until next term.

IMPORTATION OF FOREIGN GRANITE: MEMORIAL TO THE BOARD OF TRADE.

The following is a memorial drawn up by the Aberdeen Chamber of Commerce and presented to the Board of Trade:—

Having heard a representative deputation from the Aberdeen Granite Association regarding the serious loss and injury caused to the firms engaged in the granite trade in Aberdeen through the Government restrictions against the importation of foreign granite to this country, and being satisfied as to the disastrous effect which these restrictions will have on this important industry, this Chamber earnestly resolved to support the two memorials which have already been submitted by the said association to the Board of Trade on the subject, and in support of this application begs respectfully to submit the following facts for consideration:—

1. Apart from the contribution of men already supplied to the Army, Aberdeen and district has contributed both in men and ships more than any other port of its size in the United Kingdom to the wants of the Navy, chiefly for mine-sweeping and patrol operations.

2. Aberdeen's two staple industries are fishing and the manufacture of granite, and as the fishing industry has been so severely affected through providing men and ships as above mentioned, it would be particularly hard on Aberdeen's commercial prosperity if its other most important industry were destroyed.

3. The granite trade alone has already supplied to the forces, or furnished ammunition works with over 1,000 men.

4. The Chamber is assured that the shipping required for a limited supply of granite will be readily found by neutral countries, and that no British shipping will be used.

5. The Chamber is also informed that if this neutral shipping is not chartered for the purpose of bringing granite supplies from Norway and Sweden to this country, it will likely be employed in carrying goods from those countries to Germany. Some of the proprietors of the large granite quarries in Norway and Sweden own their own steamers for delivering their goods at foreign ports.

6. If all granite imports are prohibited it consequently follows that the exports of manufactured granite to neutral countries, especially America and the Argentine, will also greatly diminish. The export value of the manufactured article is many times as great as the value of the imported stone.

7. If the prohibition is retained the result will be that a number of the existing firms will have to close down, and a number of men who are ineligible for military service will be thrown out of employment, and great hardship will be entailed on their wives and families—a result which will unfavourably affect other trades and industries.

8. In conclusion, the Chamber would support the arguments set forth in detail in the two memorials already submitted to the Board of Trade on the subject, and as in their second memorial the Granite Association have limited their request to a very moderate supply, this Chamber sincerely hopes that the petition of the Granite Association will be granted without undue delay. And your memorialists will ever pray.

(Signed)

JAMES C. GLEGG, President.
JOHN S. YULE, Secretary.

R.I.B.A.

Probationership R.I.B.A.

The following letter has been addressed from the Institute to the masters of Public Schools throughout the United Kingdom who are members of the Head Masters' Conference:

"Dear Sir,—I am instructed to inform you that the Council of the Royal Institute of British Architects have decided to discontinue holding the Preliminary Examination which it has been hitherto necessary for a student to pass before being registered as a Probationer.

"The Council do not in any way recede from the position which they have invariably taken that for anyone intending to devote himself to the practice of architecture a thoroughly good general education is essential, and that there should be included in that education the study of at least one modern language and of elementary mechanics and physics; but since the Preliminary Examination was started there has been a large increase in the number of public examinations which afford a test of general education, and this, combined with the system of leaving certificates, which will probably be largely extended in the future, has practically done away with the necessity for this Preliminary Examination.

"In future all candidates desirous of qualifying as probationers R.I.B.A. must produce evidence of their general education satisfactory to the Council. Such evidence would be a certificate of passing some recognised public examination, a school leaving certificate, or in cases where special circumstances have prevented a candidate from acquiring such certificate, a letter from the head master of his school certifying that he has undergone a course of study qualifying him to be registered as a Probationer.

"The examination in geometrical or perspective drawing, and in freehand drawing, will still be continued for those candidates who are unable to produce satisfactory evidence in the shape of drawings of an elementary knowledge of these subjects.—Yours faithfully,

"JOHN SLATER,

Chairman of the Board of Architectural Education."

New Fellows and Associates.

At a general meeting (business) of the Institute held on June 5, the following candidates were elected:—

As Fellows (6).

Farrow, George Reginald [A. 1908.]
Varndell, Charles Edward [A. 1900, Grissell Medallist].

Together with the following Licentiates who have passed the Qualifying Examination:

Cratney, Edward, Wallsend-on-Tyne.
Lovegrove, Gilbert Henry.
Poulter, Briant Alfred.
Thomson, James, Dundee.

As Associates (11).

[All candidates passed the Qualifying Examination last year.]

Cheek, Cyril Cliff [S. 1912].
Colbeck, Henry [S. 1909].
Fyfe, J. S. [S. 1913], Sheffield.
Gale, C. H. [Special], Hong Kong.
Gee, Ernest [S. 1913], Chester.
Hill, Claude Edgar [S. 1911], Sheffield.
Hull, Jas. Vincent [S. 1913], Garstang.
Picton, Clarence Spencer [S. 1913].
Rainger, H. T. [Special], Cheltenham.
Rough, J. W. [Special], Invercargill, N.Z.

Vinden, Gilbert [S. 1912], Reading.

NEWS ITEMS—continued from page x.

Builder with Six Sons Serving.

At a meeting of the Melton Mowbray Urban Tribunal a builder, who applied for exemption for the only joiner he had left, said he had six sons serving in the army, and the other one would also have been there but for the fact that he was sent back. A Military Representative: Give him what he wants.—The Applicant: We have a job on which might take till November.—The Chairman: You will be satisfied with exemption till November 1?—Yes. The Chairman: Very well, then.

Changes of Address.

Messrs. Spalding and Myers (Mr. Reginald H. Spalding, F.R.I.B.A., and Mr. Norman T. Myers, A.R.I.B.A.), architects and surveyors, have removed their offices to 12, New Court, Carey Street, Lincoln's Inn, London, W.C. Their new telephone number is Central 660.

Mr. Ernest G. Theakston, F.R.I.B.A., has also removed his offices to 12, New Court, Carey Street, Lincoln's Inn, London, W.C. His new telephone number is Central 660.

A Domestic Cooling Cabinet.

Some of the most recently built houses in America are being equipped with a cooling cabinet, which is designed to fulfil the functions of the refrigerator to a very great extent, if not entirely. It makes use of no ice, chemicals or machinery, but its interior is maintained at a temperature sufficiently low to keep viands in good condition for a moderately long period to answer all domestic purposes. The cabinet

is kept cool by a circulation through it of the cold water used for the ordinary household purposes. This water circulates about each of the chambers of the cabinet, and the temperature is maintained at an even rate which can always be relied upon. After its passage through the piping of this device it is discharged at the regular faucets.

OBITUARY.

Mr. Edward Thornton, F.R.I.B.A.

We regret to announce the death of Mr. Edward Thornton, which took place somewhat suddenly on June 12 in Calcutta. The late Mr. Thornton was the third son of Sir James and Lady Thornton, and was in his forty-seventh year. An illustrated account of his work appeared in the Journal for December 7, 1904. Articled in 1887 to Mr. Rowland Plumbe, he visited France and Germany in 1888 and 1889, started practice in Westminster in 1891, and became an Associate of the R.I.B.A. in 1892, and Fellow in 1904. From 1894 to 1897 he was associated with Mr. H. Ryan-Tenison, F.R.I.B.A., with whom he did much school work in South London. Taking residence in India in 1898, he there did a great deal of work, much of it of considerable merit.

Mr. Watkin Jones.

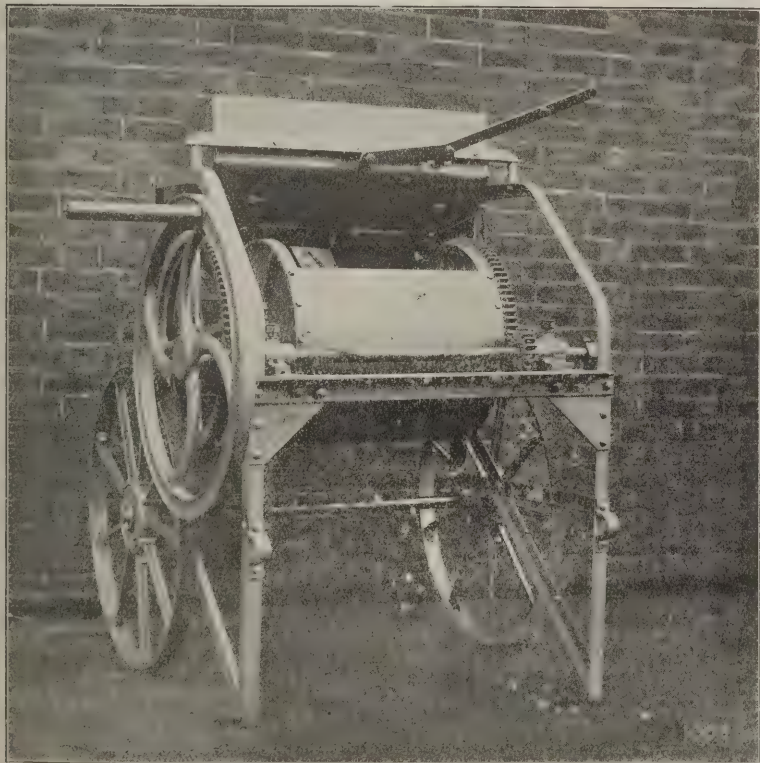
Mr. Watkin Jones, builder and contractor, who has died at the age of 74 years, had a contract in connection with the Menai Suspension Bridge, and had also executed several important Government and public contracts in the district.

THE DUBLIN SLUMS.

A correspondent of the "Daily News" declares that the dreadful slums in Dublin are the direct result of the suppression of Ireland's national Parliament in 1800. Dublin, for some time before "Grattan's Parliament"—i.e., before 1782, had been steadily improving; the Viceroy's were proud of the capital and schemes of improvement were frequent. Grattan seemed to have opened up a new era, and Dublin became the seat not only of an eloquent Parliament but of a brilliant society. It was noticed by travellers that artists were accorded a better position there than in London.

There were in Dublin 130 houses of Peers, members of the Irish House of Lords; and the city began to take its place among the capitals of the Empire. Efforts were made to benefit the poor. Shortly before the Union a Bill was introduced to widen the streets, and this was only one of many improvements. Grattan's policy had been the means of uniting all classes, when—utilising the panic caused by the events of 1798—"the Union," involving the destruction of the Irish Parliament, was forced upon Ireland.

The effect upon the city was immediate and lamentable; the classes vanished; the residences of the peers were deserted and are now tenement houses. Society, which had patronised the arts, fled to England, and Dublin decayed. Of late years some attempt has been made, and not unsuccessfully, to recover the lost ground; but no general advance will be possible, the correspondent concludes, until the condition of the city, and especially of the poor, is entrusted to an Irish Parliament.



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LATE CONTRACTS, etc.

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June 21.—**SLAG.** Kidsgrove.—Supply of 500 tons 2-in. blast furnace slag and 50 tons ½-in. slag chippings, for the Urban District Council. Particulars from J. J. Nelson, Clerk, Kidsgrove.

June 26.—**MACADAM.** Farnborough.—Supply of about 500 tons of 2-in. broken limestone macadam (untarred), delivered at either Farnborough, L. and S.W.R., or North Camp, S.E. and C.R., for the Urban District Council. Particulars from J. E. Hargreaves, Surveyor, Town Hall, Farnborough.

MISCELLANEOUS.

June 21.—**PORTLAND CEMENT.** Aldershot.—Supply of English Portland

cement for one year as from July 1, for the Urban District Council. Particulars from F. C. Uren, C.E., District Surveyor, Municipal Buildings, Aldershot.

June 21.—**BRUSHES, ETC.** Mickleover (near Derby).—Supply of brushes, etc., to the Derby County Asylum, Mickleover, near Derby. Particulars from the Clerk, Asylum, Mickleover.

June 21.—**MATERIALS.** Bristol.—Supply of ironmongery, timber, etc., for the Guardians. Particulars from J. J. Simpson, Clerk, St. Peter's Hospital, Bristol.

June 22.—**OILS AND PAINTS.** Dewsbury.—Supply of oils and paints, for the Guardians. Particulars from C. P. Pickersgill, Clerk, Wellington Street, Dewsbury.

June 23.—**MATERIALS.** Bristol.—Supply of the following for the Guardians: Bricks and sanitary appliances; timber; oils and colours; lubricating oils, etc.; dry-saltary; ironmongery (builders' and heavy articles); ironmongery (light); coffin timber; electric fittings; gas fittings. Particulars from J. J. Simpson, Clerk to the Guardians, St. Peter's Hospital, Bristol.

June 26.—**MATERIALS.** Salford.—Supply of the following, for the Electricity Department: Cable accessories; cement, lime, bricks, etc.; demand indicators; motor carbon brushes; iron castings; iron and steel bars; nuts, bolts, screws, and nails; tools and implements; brushes; files; W.I. steam tubes and fittings; dry-salteries; timber; wood fittings; engine-

room stores; oils. Particulars from Borough Electrical Engineer, Electricity Works, Frederick Road, Salford.

No Date.—**MATERIALS.** Grangemouth.—Supply of water pipes, malleable iron tubes, fireclay goods, general castings, cement, wood, hardware, oils, paint, tools, etc., for the Corporation. Particulars from D. A. Donald, C.E., Burgh Engineer, Town Hall, Grangemouth.

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THE ARCHITECTS' & BUILDERS' JOURNAL.

Wednesday, June 28, 1916.

Volume XLIII. No. 1121.



DESIGN FOR AN ORGAN CASE, BY WILLIAM KENT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

JUNE 28, 1916.

TOTHILL STREET, WESTMINSTER.

VOLUME 43. No. 1121.

EDITORIAL.

ON Wednesday last, the House of Commons unanimously passed a resolution to appeal to the King to order a national monument expressive of the late War Secretary's illustrious military career and his devoted services to the State. It is an inspiring subject for art, whether it is to find expression in statuary or in some form of memorial building. In either case the designs should be obtained in open competition. To commission an architect or a sculptor would be to overwhelm him with a sense of responsibility that might well impoverish invention and paralyse execution. On the other hand, the competitor, inspired by hope, would be stimulated rather than depressed by the greatness of the occasion, and we might therefore chance to get something really worthy of it. If statuary is chosen, the setting should be architectural, and the conditions of the competition should provide for the co-operation of architect and sculptor.

* * * *

We note with pleasure that the Minister of Munitions has appointed Mr. Ernest Newton, A.R.A., President of the Royal Institute of British Architects, to advise the Ministry on various problems arising out of the stoppage of private building operations. That the appointment carries no emolument need not be said; and it is a wise custom to secure advisors who are unfettered by sordid obligations; for there is no guarantee that every man thus honoured could inspire the same confidence as Mr. Newton, who in any circumstances would speak and act with the most uncompromising independence. His appointment will be welcomed as a recognition—somewhat tardy. It is true—that the profession of which he is the elected representative is in a position to serve the State in other ways than as a recruiting agency. This appointment carries, apparently, the further gratification that at last the Government realise the importance of moderating upon the general stoppage of building work, and are prepared to relax the severity of their draconic order. There should be no need of the reminder that to permit the resumption of work involves a corresponding release of sufficient materials for its execution, and it may be confidently assumed that this point is in no danger of being overlooked. If the advisor is to have the delicate task of discriminating as to what particular work is to go on and what is to remain at a standstill, he is not to be envied; but there is no man whose decision on such nice points would inspire more absolute confidence than personal considerations cannot sway him by a hair's breadth.

* * * *

Much doubt and hesitancy has been dispelled as a result of the Allies' Economic Conference in Paris. It would appear that the Conference was resolute upon three principal points—that during the war no German goods of any kind shall be used, and that all

alien-enemy-controlled firms in the countries of the Allies shall be rigorously suppressed; that during the time of recuperation after the war, measures shall be taken to keep all our own industries, raw material, merchant shipping, etc., for our own benefit, while prohibitive or penal duties shall be imposed on dumped goods and German ships; and that after the war bounties shall be given to special and basic industries, and steps be taken to encourage shipping and to train men in the art of circumventing German attempts to dominate the world by cornering important industries. If this advice takes effect—and there is every reason to assume that it will—the vexed question of Free Trade versus Protection falls dead as a political issue. There will be, as Mr. W. M. Hughes, speaking at the Mansion House, warned us the other day, persons who will suffer from the change, and who will not go down without a bitter struggle; but, said Mr. Hughes, "what those who openly or secretly oppose the organisation of British industry really mean when they say that it will be suicidal for England not to allow Germany to dump her goods into Britain after the war is that it will affect their pockets." That implies Tariff Reform, or Protection; and if this policy is essential to the salvation of the Empire, no patriot will oppose it for the sake of a mere political shibboleth. It is no longer a political issue, but a national necessity.

* * * *

Mr. Hughes's inspiring speech, which was published last Thursday, deserves the widest possible circulation. "You know," he said, "that the Central Powers have recently entered into a very close economic alliance, and Germany is using all its genius for organisation to make it effective. At the close of the war we shall have to face not only the Germany of seventy millions that we knew, and whose power we felt, but also the united forces of the Central Empires, with a population of 120 millions. Then the neutral nations, growing rich while we grow daily poorer, are making great preparations to capture the world's markets and oust us from our position. Is it not obvious that what we have to do is to organise our labour forces, raw material, machinery, shipping—in short, all our resources—systematically and scientifically? We must control industry, otherwise we cannot organise it. We must put not only energy into the work, but brains. And we must call science to our aid. Common sense and our own bitter experiences have made us realise how vital to national safety and welfare the raw materials of our basic industries are." From the attitude we have consistently adopted, our readers will infer that we do not consider this to be an exaggeration of the case for solidarity and efficiency.

* * * *

It need hardly be said that with this question of efficiency the building industry is most intimately concerned—because builders, professional and practical,

form the largest section of the community, because everybody must be housed; because the design and construction of factories, workshops, laboratories, schools, dwellings, must be carefully reconsidered in the light of the fresh developments; and because dumped machinery and materials have had, during the past decade or so, a most powerful influence on design and construction. In future, this country will become far less dependent on its imports, far more self-contained in every way, and will build accordingly.

* * * *

In Mr. Hughes's speech there was what may be fairly construed as an oblique reference to the housing question. "This new economic edifice which we intend to rear, and which we shall rear," he said, "must rest upon the solid and enduring foundation of such conditions for the great masses of the people as will ensure not merely a numerous but also a virile population. This involves the payment of such a fair and reasonable wage as will enable a man to marry and rear a family in a state of comfort compatible with a high standard of civilisation." If that does not imply good housing, it has no anchorage; and good housing, as we have often contended before, depends upon good wages. Hence our persistent opposition to those paltry make-shifts and expedients that, evading the cardinal factor in the problem, have for their sole object the excessive cheapening—the extreme degradation—of housing to meet the excessive cheapening and extreme degradation of labour. It is greatly to be regretted that Government Departments have done much to foster the short-sighted view of which the mud-hovel is typical by publishing threepenny specifications for twopenny-halfpenny cottages.

* * * *

Sir Aston Webb's protest against the Charing Cross bridge scheme receives powerful support in letters which have appeared in the "Observer" from Mr. Reginald Blomfield, Professor W. R. Lethaby, Mr. Ernest Newton, and Mr. William Woodward, whose recovery from his recent illness is thus happily signalised. Mr. Blomfield puts the case with his customary vigour. "If," he says, "the bridge is extended as proposed, at a cost of some £170,000, it means that the S.E.R. Company will squat in Charing Cross Station for ever; and it puts a definite end to the scheme which has been for years the aim of all who have studied the civic architecture of London—namely, the transfer of the terminus to the south side of the river and the formation of a monumental bridge for road traffic, leading from a great 'Place' on the south side, through Northumberland Avenue to Trafalgar Square on the north." He wants to know how long we are to endure the thralldom of vested interests, which killed Wren's scheme, smeared Regent's Street with stucco, and has left us with the meanest and most muddled capital in the world.

* * * *

Professor Lethaby declares that the decision as to Charing Cross bridge will be a test and a symbol of whether or not we realise that "pride in our city is strength, and that 'form' is the form of the spirit." He has heard, no doubt, of the mean attempts to belittle and discredit the protest by pretending that it comes from faddists and aesthetes; for, he says, "it is not a question of art or of beauty; it is a question of tidiness, efficiency, and order." That is no doubt the right line to take with the utilitarians, as it meets them on their own ground, and conveys to them more than a hint that they are heretical to their own doctrine. Inconsistency of another sort is imputed by Mr. Newton to those who, while sweeping away with almost indecent eagerness fine old buildings (perhaps he has his eye on Cloth Fair, but he does not specify),

nevertheless tolerate the existence of this "deplorable structure." He sees in this complacency "a morbid development of the British instinct to defend the friendless." Mr. Woodward gives us a vigorous simile. "Engineers' architecture," he says, "is as a rule atrocious, and the proposed patching up by engineers of the present bridge will simply blacken Satan." The general manager of the railway very blandly and suavely deprecates an alleged misapprehension of the "hard facts," and claims credit for the company's self-abnegation in substituting the proposed uglification for the greater calamity of erecting a new bridge authorised by Parliament years ago. Our gratitude for this mercy knows no bounds.

* * * *

An interesting communication (see page 273) from the hon. secretary of the Royal Institute of the Architects of Ireland vindicates the Institute from any possible charge of neglect of professional interests with regard to the Dublin Town Planning competition. It will be seen from the dates given in the *précis* that the Institute has persistently urged the promoters of the competition to bring it to an issue; and at length it is announced that the adjudicators have begun their work. It will not be for a moment supposed that in thus rendering an account of its stewardship the Institute intends any sort of reflection on the promoters of the competition; nor, indeed, is any imputation involved. Sympathy with the competitors does not imply censure of the promoters, who quite obviously have had to contend with exceptional difficulties arising out of the war, and who have now agreed that the damage to Sackville Street is a just occasion for proceeding to assessment. Quite exceptional interest will be excited by the awards; but at the moment of writing the names of the assessors have not reached us.

* * * *

There is one point about which we feel rather disposed to remonstrate with the Irish Institute. We refer to its expressed approval of a resolution by a chamber of commerce to the effect that only Irish architects should be appointed for the reconstruction. This attitude strikes us as being regrettably narrow and provincial. We trust very sincerely that Irish architects may get the work, but on their merits rather than on their politics. Surely they have no need to fear open competition; and it is unwise to provoke the assumption that they do. Nor is this aggressive exclusiveness exactly in the fraternal spirit that should and generally does animate the members of a liberal profession. In a like contingency, we on this side of the water should never dream of excluding Irishmen, and we feel rather hurt at the lack of reciprocity. A passion of patriotism we can understand and respect, but this prohibition savours more of parochialism, and in the present instance it lacks the usual (if lame and sordid) excuse of Little Pedlington—that the money for the work is coming out of the pockets of the local ratepayers.

A NEW SERIES OF PLATES.

It is already generally recognised that after the War there must be a great extension in the provision of science and technical buildings in this country, in order that we may greatly improve our position in this respect, and so equip ourselves to meet all outside competition. We have thought therefore that we should be doing a real service to architects professionally and to the nation in general by bringing together a representative series of illustrations of the latest buildings of this class. We have accordingly made arrangements for the publication of a number of special plates, from photographs and drawings, the first of which will appear next week.

ROBERT ADAM AND HIS BROTHERS.

LIKE many another artist, Robert Adam has paid a heavy penalty for success. Pegasus harnessed as a hackney is a sorry sight, and the career of Robert Adam suggests it. His genius is undoubted, but he preferred, or he yielded to the strong temptation, to exercise it quantitatively rather than qualitatively, commercially rather than artistically, to go on repeating himself rapidly and copiously rather than to wait upon inspiration and let Patience have her perfect work. He was too much the man of business to give his genius fair play. He was always overwhelmed with work. "The practice of architect," he writes to Lord Kames in 1763, "rushes so fast upon me that I have but too few moments to dedicate to theory and speculation." Apparently he had no time to get married, though so little is known of his personal affairs that it is not absolutely certain that he died a bachelor. He fell behind his appointments, if Mary Wortley Montagu's experience of him was characteristic. "He came," she writes, "at the head of a regiment of artificers, an hour after he had promised. The bricklayer talked about the alterations to be made in a wall; the stonemason was as eloquent about the coping of the said wall, the carpenter thought the fitting up of the house not less important; then came the painter." Adam himself seems to have anticipated the modern American business axiom, "Let the other fellow talk."

Possibly he could talk himself when he saw occasion; or perhaps it was because he maintained a discreet silence that he seemed to Mrs. Montagu to be a genius; herself being of the order of brilliant talkers, who notoriously exaggerate the merits of a good listener. That he sat as member of Parliament for Kinross-shire from 1768 to 1774 does not necessarily imply a talent for talking. He would be neither the first nor the last M.P. to subside, after the election, to six years of unbroken silence. He was a clubbable man, however, for he joined the Society of Arts, the Royal Society, the Society of Antiquaries, and the Architects' Club; and he tried to teach Garrick golf.

Robert Adam, "lawful son" of William Adam and Mary Robertson, as the church register quaintly puts it, was born at Kirkcaldy, Fifeshire, on July 3, 1728. His father was, in that day, the best known and most widely employed architect in Scotland. William died in 1748, and his descendants have included a judge, a statesman, a Lord of the Admiralty, and a general who won distinction at Waterloo. Apparently the Adams were a pushful clan.

Robert went to France and Italy in 1753, prudently taking with him, in default of a camera, two clever artists, Clérissseau and Zucchi (whether Antonio or his brother Giuseppe is not established), and both men came to England and assisted Robert in his work. It was one of the Zucchis (Antonio) who married Angelica Kaufmann after her mock-marriage with the flunkey who passed himself off for his master, Count Horn. Angelica, who did a good deal of decorative painting for Adam, was one of the foundation members of the Royal Academy. Her work on the ballroom ceiling at Stratford House is illustrated in Mr. Swarbrick's book. She died in 1807.

Adam began his career when "patronage" of the arts was a society craze. Lady Wentworth "took up" Angelica Kaufmann, and Lord Bute pushed the interests of Robert Adam, procuring for him and for Robert Chambers appointments as joint-architects to the King on His Majesty's Board of Works, at £300 a year each. No doubt the same patronage ensured the success of Adam's book on Spalatro, which was published in 1764, and had among its 519 subscribers Garrick, Hume, Piranesi, Reynolds, and Horace Walpole. A second edition of this book appeared in 1778, and in the same year the brothers Adam engaged in a lawsuit concerning their rights to the exclusive

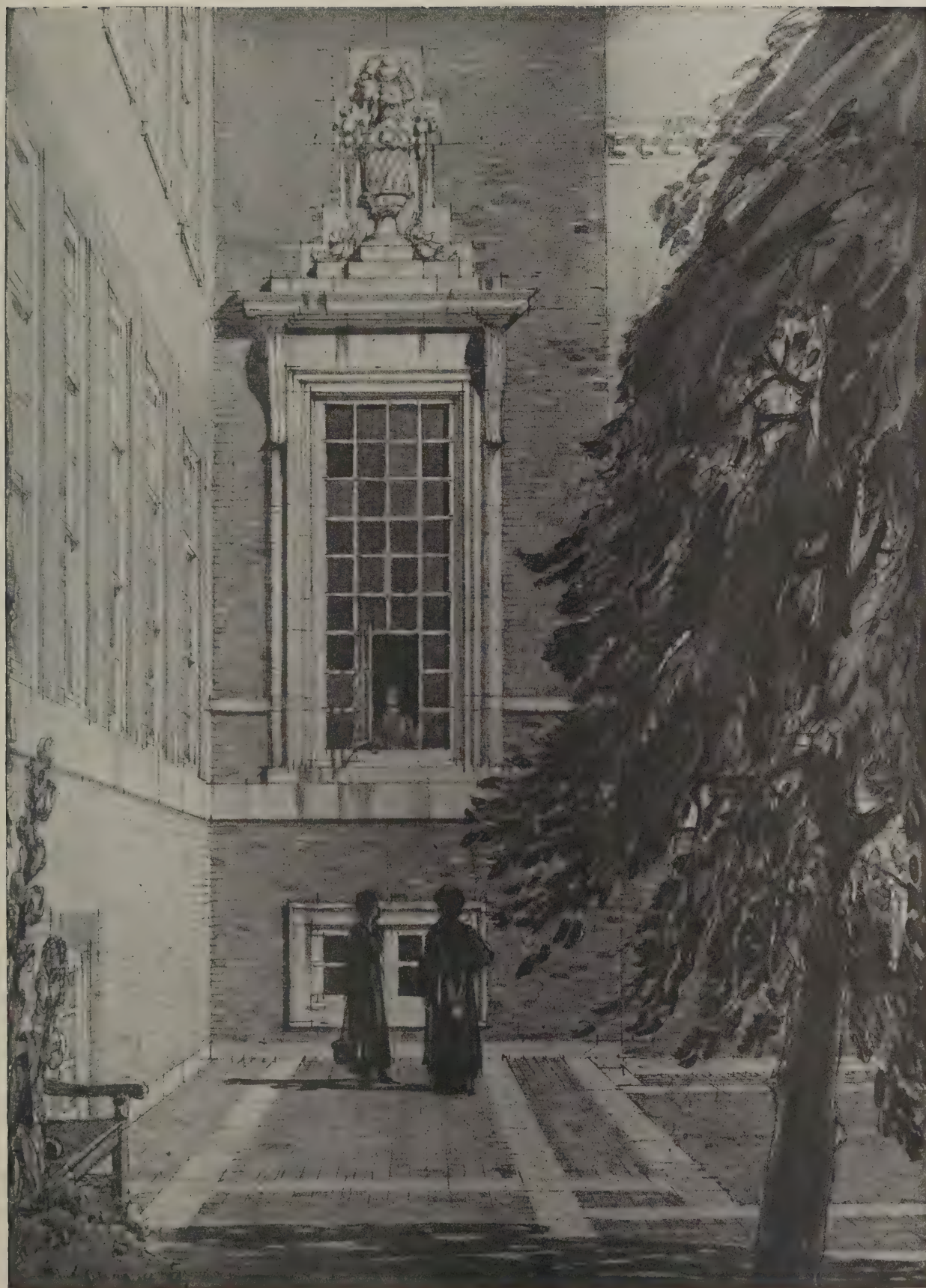
use of Liardet stucco. This was only one of several indications that they had by that time made architecture quite as much a business as a profession.

In 1768 the brothers began building in the Adelphi, and in 1771 they sought Parliamentary sanction to construct, at their own cost, an embankment that, by reclaiming mud-flats from the Thames, would render the river less inconveniently broad and shallow between Blackfriars and Westminster Bridges. Thus Sir Joseph Bazalgette's Victoria Embankment scheme (1864-70) was anticipated by more than ninety years. Of course, the earlier project was bitterly and resolutely opposed by the City Corporation. Although the brothers did not realise their vision of a long embankment they cleared up a slum area, raised on brickwork vaults the low-lying ground to the level of the Strand, and supplanted sordid hovels by streets of dignified houses. In 1773, in support of a Bill to sanction a lottery in which these properties were the prizes, it was stated that "these gentlemen spent £140,000 to raise palaces upon an offensive heap of mud," and although the claim is infelicitously expressed, it shows the magnitude of a speculation that nearly led to the financial ruin of the firm of architects, civil engineers, decorators, furniture and sedan-chair designers, and whatnot, who set up a shoppy tradition which flourishes to-day like the green bay tree, with the difference that now it is the shopkeeper, and not the architect, who runs the business.

In revenge, the "Adam tradition" has become terribly shop-soiled. Architects follow it with fidelity to its spirit, but many small traders who essay to decorate or to furnish in the Adam manner, without consulting architectural opinion, commonly seize upon the worst examples of the "period," and apply them to miscellaneous uses for which they are unfit.

There is, no doubt, a certain degree of bombast in the preface to the Spalatro book, in which the brothers say, "We flatter ourselves we have been able to seize with some degree of success the beautiful spirit of antiquity, and to transfuse it with novelty and variety through all our numerous works," but nevertheless the claim is to a great extent justified as fact, if not at all as an advertising puff to which an artist should not have stooped; and Sir William Chambers bitterly resented the bad taste of the following passage, in which it is insinuated that "the beautiful spirit of antiquity" is the monopoly of the clan Adam, that Adam is your only arbiter of taste, and that all brands lacking this trademark are "sterile and disgusting." "Nothing," the preface goes on, "can be more noble and striking, when properly applied, than a fine order of columns, with their bases, capitals, and entablatures: nothing more sterile and disgusting than to see for ever the dull repetition of Dorick, Ionick, and Corinthian entablatures, in their usual proportions, reigning round every department where no order can come, or ought to come, and yet it is astonishing to think that this has been almost invariably the case in the apartments of every house in Europe that has any pretensions of magnificence, from the days of Bramante down to our own time. In smaller rooms, where height is wanting, the architrave has sometimes been omitted, and sometimes both architrave and frieze, but their places were ponderously supplied by a cornice of the most ample dimensions, fit for the temple of Jupiter Tonans, from which it was imitated, perhaps, or more probably copied."

Adam went too far towards the opposite extreme. In striving for gracefulness and elegance he often attenuated his details to insignificance, with the result that on large surfaces he had to multiply them until the general effect was intricate and wearisome—delicate, indeed, but with the delicacy of anæmia. He was probably responsible for the design of some of the "spindle-legged" chairs of Chippendale, on which a portly man would hesitate to trust his weight. There is surely a middle course between the dull heaviness of



CURRENT ARCHITECTURE (SERIES III.). XLII.—KING'S COLLEGE HOSTEL FOR WOMEN, CAMPDEN HILL, LONDON, W.:
VIEW IN QUADRANGLE.

H. PERCY ADAMS AND CHARLES HOLDEN, ARCHITECTS.



CURRENT ARCHITECTURE (SERIES III.). XLIII.—KING'S COLLEGE HOSTEL FOR WOMEN, CAMPDEN HILL, LONDON, W. :
THE REFECTORY.

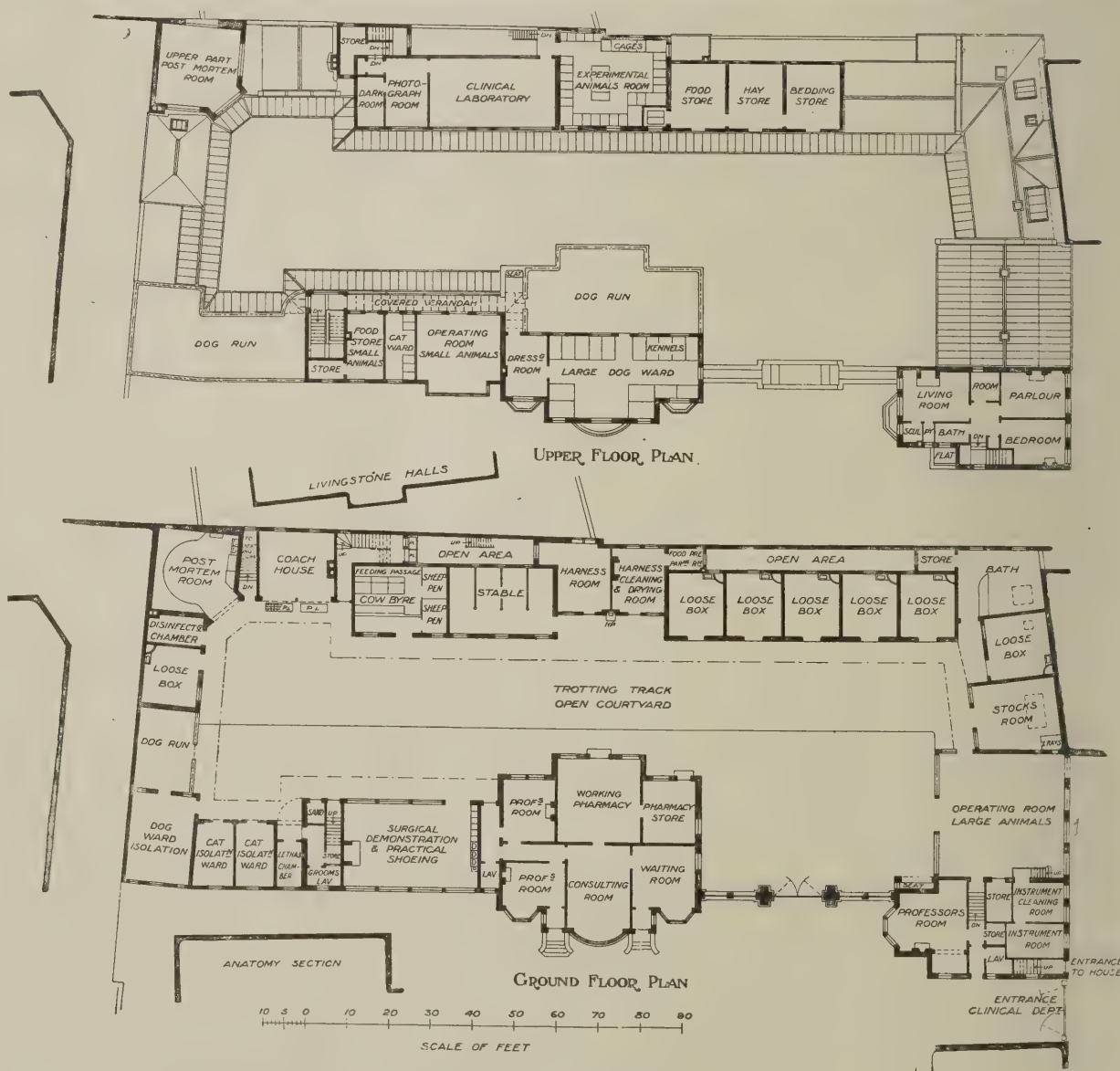
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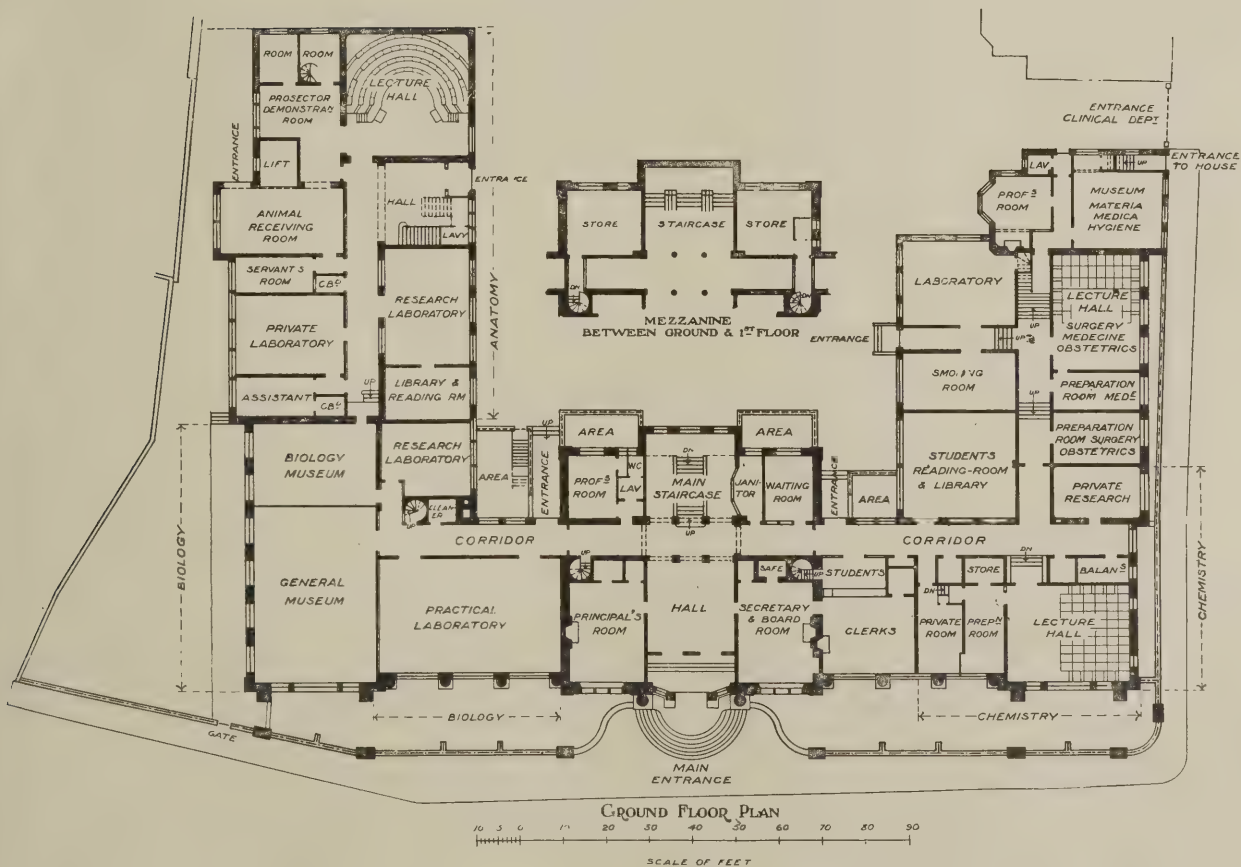
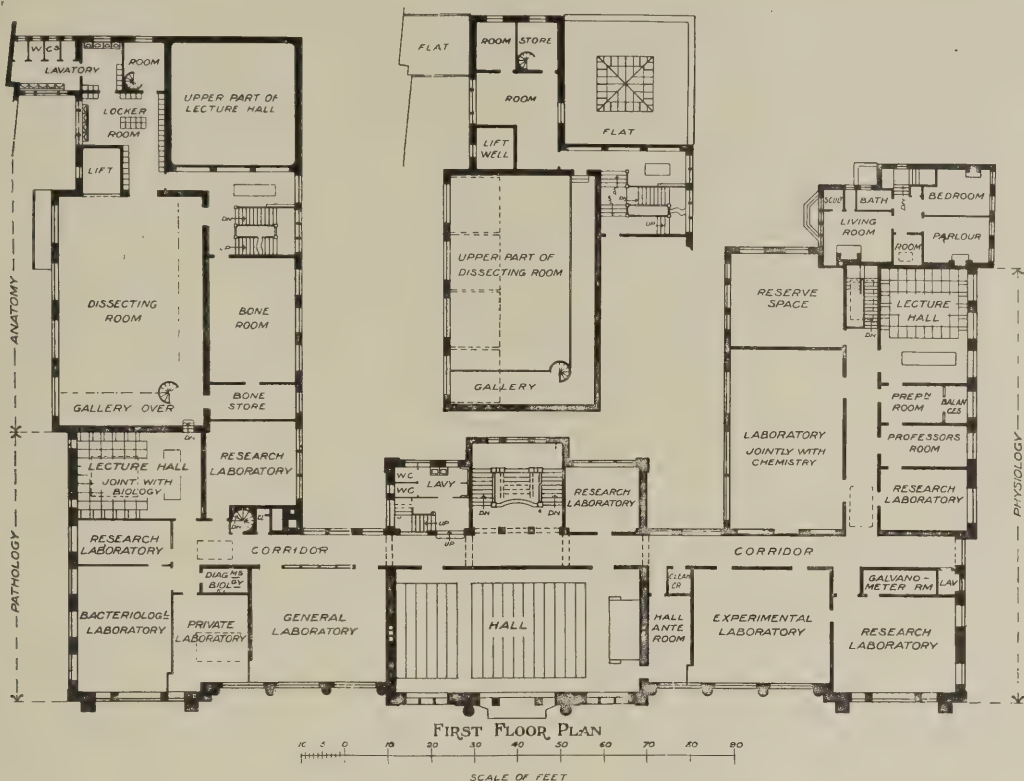
LONDON FAÇADES. XI.—No. 29, DOVER STREET, W.
JOHN NASH, ARCHITECT.



DETAILS OF CRAFTSMANSHIP (SERIES II.). XI.—MARBLE INLAY FROM HADRIAN'S VILLA, TIVOLI, ROME.
(NOW IN THE SOANE MUSEUM, LONDON.)



Clinical Department Buildings.



DICK) VETERINARY COLLEGE, SUMMERHALL, EDINBURGH.

ATE R.I.B.A., ARCHITECT.

which he complained and the weak scrannel ornamentation in which he somewhat over-emphasised the ideals that ultimately became an obsession. His work paid the penalty of profusion—it became mannered. To say this, however, is merely to imply that he had the defects of his qualities. At his best—as at Lansdowne House, Wilton House, Harewood House, Ken Wood. Syn House, Kedleston—he abundantly makes good his reputation as not merely the most prolific but one of the two most accomplished of British decorators, the other being, of course, Sir William Chambers, whose decorative work shows at least equal mastery, and is too little known.

As to his elevations Adam is best seen in his medium-size town houses, in which his apparent dislike of mass and plain surface, and his over-fondness for fanlights and columns and pilasters, are less fussily evident than in buildings which gave him larger opportunities for “breaking up the surface,” as, for examples, Edinburgh University buildings, and Gosford House, Haddingtonshire. He had, in fact, so fine an eye for details, so exquisite a feeling for independent forms, that the temptation to overwork these gifts must have been overwhelming, and he often yielded to it at the expense of the larger view. Neither has sense of proportion nor his power of composition was at fault, but his vision lacked range and sweep. He was, in short, much less an architect in the broader sense of the word than a decorative artist of scholarly insight and consummate skill, designing with equal felicity in metal, stone, plaster, or wood—or, at the worst, so directing the energies of his numerous assistants as to give always a sense of the Adam touch. It is not easy to mistake an Adam ceiling, doorway, balcony, veranda, fanlight, for the conception of another mind. He died on March 3, 1792, at No. 13, Albemarle Street, and was buried in the south aisle of Westminster Abbey, with a duke and several lords for his pall-bearers. Of the brothers who were his devoted coadjutors, very little is known; they were mere shadowy reflexes of the master mind.

Mr. Swarbrick has got together a delightful collection of illustrations, which afford the first virtually complete view of Adam work in all its phases. In this respect he has earned our gratitude, which is also extended to Messrs. Batsford for their share in the production of a volume that, in its physical aspects as well as in the intrinsic interest of its subject, is a right Batsford book, and needs no further commendation. The general excellence of the typography, however, rather increases one's irritation at an occasional artless misuse of the comma, as in “a lofty, central block,” and his son, William.” Such absurdities, though trivial, are nevertheless always exasperating, and may even be misleading. For instance, from the second example it might be inferred that William was the only son, if we did not happen to know that William Adam the elder had several sons. In writing the text, the author himself shows a cognate superfluity. He might have spared us such banalities as “Piranesi's magnificent etchings, which are so highly esteemed”; “but it should be remembered that painters were often able to engrave in addition to those who practised as engravers only”; “in addition to being a scientist, Wren was unquestionably a great artist.” When an author tells us that a war “was then progressing,” and that someone “commenced to reside,” it becomes evident (since these are fair samples) that his style is of the pedestrian order. His method of presentation, too, is mainly chronological and descriptive, rather than philosophical and analytical. Approbation of a commonplace kind there is in plenty, but we are left at a loss for anything in the nature of illuminating or expository criticism. Like Adam, he concentrates on details, and does not generalise. But certainly the author deserves all the praise that can be accorded to painstaking industry diligently, and no doubt enthusi-

astically, applied to a congenial task. He has got together a mass of most interesting materials, and has produced a book that, while without much pretension to literary form, is in substance a valuable addition to the architectural library. As it will almost certainly reappear in further editions, we would suggest the wisdom of prefacing them with an introduction in which Mr. Swarbrick's excellent materials should be turned to critical account by an independent authority wielding a facile pen. It might well take the place of the present “Introductory Note,” in which there are several illustrations of other men's work that are of dubious relevancy.

“Robert Adam and His Brothers: Their Lives, Work, and Influence on English Architecture, Decoration, and Furniture.” By John Swarbrick, A.R.I.B.A. Pages x + 316, price £2 2s. net. London: B. T. Batsford, Ltd, 94, High Holborn.

THE PLATES.

King's College Hostel for Women, London, W.

THE plates show two portions of King's College Hostel for Women, at Campden Hill, London, W.—a view in the refectory and a view at one end of the quadrangle. The first portion of the college has recently been completed. In style an individual version of English Renaissance of the Wren period, the building is, we think, one of the happiest and most successful which Messrs. Adams and Holden have carried out. It is interesting alike for the new scheme of teaching embodied in it, and for the architectural expression obtained in a fine piece of brickwork. At this branch of King's College instruction in domestic and social science for women is given, and such novel features as the teaching kitchen, teaching scullery, teaching laundry, etc., are of great interest, while the physiological, biological, and physics laboratories are most admirably planned and equipped.

No. 29, Dover Street, London, W.

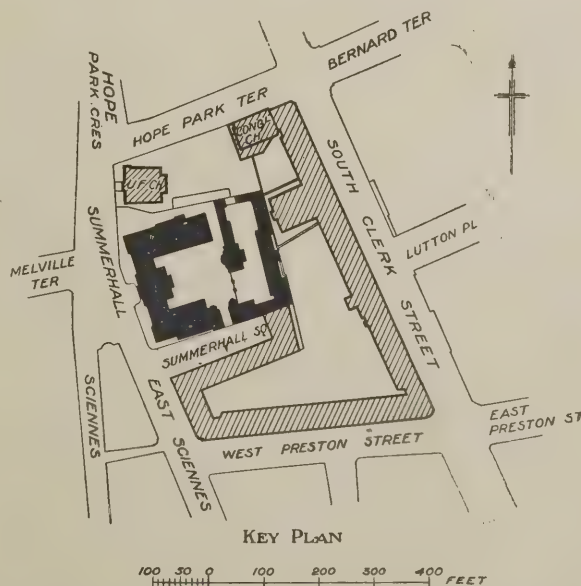
This was Nash's own house, and is an admirable example of a stuccoed façade. It was built in 1828.

Marble Inlay from Hadrian's Villa.

The figure, the chariot, and the stags are in white marble, set against a dark ground, with two enclosing borders.

Royal (Dick) Veterinary College, Edinburgh.

A description of this building is given on page 276.



ROYAL (DICK) VETERINARY COLLEGE, EDINBURGH:
BLOCK PLAN.

CORRESPONDENCE.

Dublin Town Planning Competition.
 To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—Comment having appeared from time to time in the professional Press with reference to the delay which has occurred in adjudicating upon the designs submitted in competition for the prize of £500 generously offered by the Marquis of Aberdeen during his Viceroyalty, the Royal Institute of the Architects of Ireland desires to make known the steps it has taken to urge upon the promoter to publish the award. The Institute would be glad, therefore, if you would be so good as to publish the enclosed précis of the correspondence which has taken place.

FREDERICK HAYES.

Hon. Secretary, Royal Institute of the Architects of Ireland, Dublin.

[PRECIS.]

The conditions were issued on March 31, 1914, and the time fixed in them for sending in the designs was September 1, 1914. A letter was received by the hon. secretary dated April 9, 1914, drawing attention of the members of the Institute to the competition. A second letter dated August 12, 1914, was received by the hon. secretary intimating that, owing to the War, the time fixed for sending in the plans was postponed to April, 1915. On January 19, 1915, the hon. secretary wrote to Lord Aberdeen asking him to fix the actual date upon which the plans should be sent in. On March 4 a wire was received from Lord Aberdeen saying that the letter must have miscarried, and that he was replying. On March 18, 1915, the competitors received a printed circular dated March 18, informing them that May 1, 1915, had been definitely fixed as the closing date for the competition. On June 7, 1915, the hon. secretary wrote to Lord Aberdeen asking him when the result of the competition would be declared. On June 10 a reply was received stating that two of the three assessors were not available, and that the third was unwilling to act without his colleagues. In the circumstances a further postponement was inevitable; that, if possible, the adjudication would take place in September, 1915, and if not then in May or June, 1916. On June 21, 1915, the hon. secretary sent Lord Aberdeen a copy of a resolution passed unanimously by the Council at their meeting the same day. This resolution suggested that, as the original assessors were not available, Lord Aberdeen should appoint other persons as provided by the terms of the competition. The Council was informed that the competitors had received a letter dated August 13, 1915, signed by William A. McConnell, assistant hon. secretary of the Civics Institute of Ireland, stating that, at the request of Lord Aberdeen, the Civics Institute had undertaken to look after the details in connection with the competition. On April 19 a letter was sent to Mr. McConnell, hon. secretary of the Civics Institute, by our hon. secretary, asking what steps were being taken for the early adjudication of the competition. Mr. McConnell called on the hon. secretary and said he had cabled to Lord Aberdeen on the subject. On April 20 the hon. secretary wrote to Mr. McConnell to ask him whether he had heard from Lord Aberdeen. Mr. McConnell replied verbally that he had received no reply. On June 14, 1916, the hon. secretary wrote to Mr. McConnell asking if any further letter had been received from Lord Aberdeen, as the Institute considered that its action in relation to the Dublin town planning competition should be made public. On June 19 a letter was received from Mr. McConnell stating that it had been definitely settled by Lord Aberdeen to go on with the adjudication, and that the adjudicators commenced their work on Saturday, June 17.

[This matter is referred to in our editorial columns.—EDS. A. AND B.J.]

Mud Houses for Farm Labourers.

To the Editors of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIRS,—A short time ago you made reference to a suggestion to erect mud dwellings for the working classes—more especially farm labourers. In this connection the following description of such buildings as erected in this out-of-the-way corner, may prove interesting to members of the profession, who have never seen or contemplated mud buildings.

No doubt you and your readers are aware that this is a country subject to periodical earth tremors, more or less violent according to their periodicity. For this reason the customary kind of building construction adopted in Europe is inadmissible, and is never used. The ordinary house developed on native lines may be roughly divided into two classes. The first is a mere hovel of one or two rooms built either of wickerwork plastered on both sides with mud and chopped straw, or having thick walls of mud bricks called "adobies" or "adobillas" (these mud bricks are sun-dried, having been previously mixed with chopped straw to give them tenacity). As will be imagined, these buildings are of one storey only. They are roofed either with a rough thatch or with corrugated iron, walls on the outside being plastered with mud plaster or covered with sheets of tin. The interior is plastered and papered—usually with old newspapers. These "houses" may or may not have windows, but invariably they have a mud oven, built outside, and an earth closet.

The second class of native house is of wood framing set upon rough stone foundations, and may be of one, two, three, or sometimes even four storeys high. The timber is native "Roble Pellin," in scantlings of 3 in. by 6 in. and 4 in. by 6 in. for the vertical frames, and for the floors joists of "Raulé" 2 in. by 6 in., 8 in., or 10 in., according to span, with floor-boarding of the same wood in narrow widths. The ceilings are invariably boarded and painted, and in better-class houses are covered with stretched cloth upon which plaster ornamentation is put "according to taste." The vertical frames are first braced and then the studs are fixed at distances varying from 18 in. to 30 in. On each side of the studs is nailed a fillet of 2 in. by 1 in.; this is for the purpose of securing the mud bricks with which the spaces are filled, and which are made with corresponding grooves at their ends, to prevent the bricks being displaced when a "shake" occurs.

The houses are usually plastered both inside and out with mud plaster made of the lower vegetable soil made into a paste and mixed with chopped straw. This is allowed to get perfectly hard; it is then set with a thin layer of pure lime putty, which, when dry and well oiled, presents quite a good surface and is suitable for papering or painting. In suburban districts the outsides of the houses are frequently finished with matched and moulded boarding, and are usually painted white, whilst both in town and suburban buildings galvanised iron with small corrugations is frequently used instead of plaster. Unless other means than mere adhesion were employed, the plaster would, of course, drop off during an earth tremor; it is therefore usual to fix small nails at various points, and to stretch wires between, crossing one another.

Although this country is not subjected to the intermittent rains and damp weather so common in the British Isles, there is a considerable amount of rainy weather, during which times torrential rains are experienced, very frequently flooding the roads, and the type of building above described has been found to be both weatherproof, and to a certain extent earthquake resisting.

JAS. W. FARMER, F.R.I.B.A.
 Valparaiso, Chile.

THE CONSTRUCTION OF A MILITARY CAMP.



GENERAL VIEW OF CAMP.

WAR conditions have brought about many changes in the methods of erecting buildings, owing to difficulties in obtaining materials which were abundantly available in pre-War times, and owing also to lack of labour. In connection with the construction of military camps especially the supply of materials has been a problem, but after a careful study of all the available resources, some astonishingly satisfactory results have been obtained. The accompanying illustrations show a large military camp, the buildings for which, instead of being

constructed with timber, corrugated iron, and lath and plaster, are for the most part built up with concrete slabs in combination with a light steelwork skeleton frame.

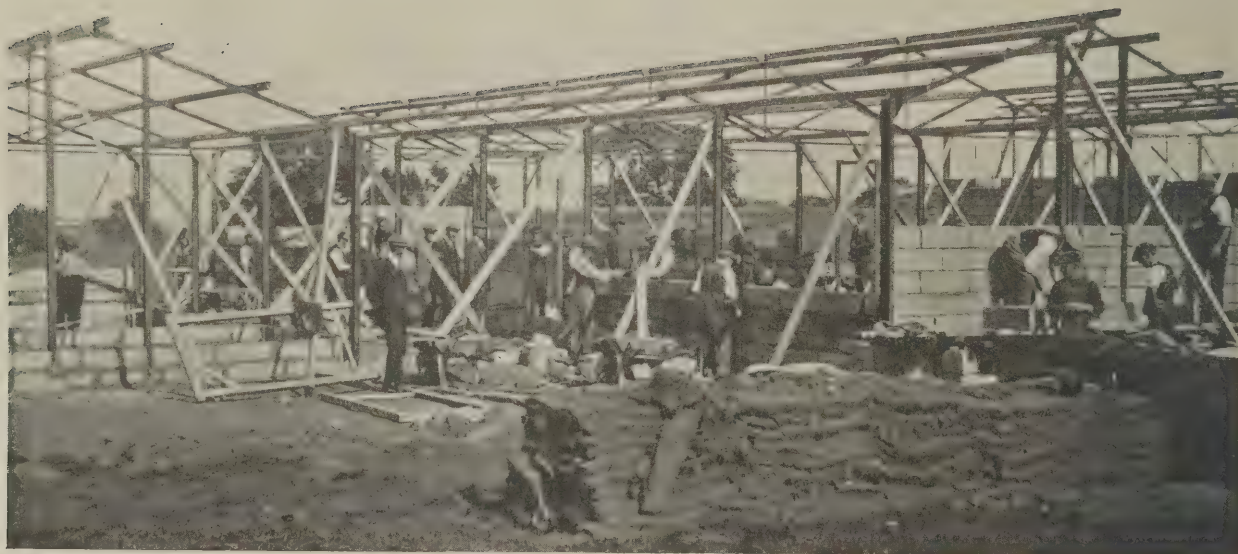
The camp is situated in a valley, and the bed of a stream furnished large quantities of sand and gravel of a character especially suitable for use as an aggregate for concrete. The engineers for the scheme very wisely decided to utilise this material. Large boulders were used for road-making, the medium-sized material for in-situ concrete, and the smaller material and sand for the con-

struction of the hutments. The following is a brief description of the method adopted:

After the positions of the buildings had been pegged out, the turf was stripped from the site with a cutting machine, and excavations were made for the necessary footings to walls and for the bases of the steel stanchions. The rolled steel joists forming the latter were next placed in position, their lower ends being embedded in the concrete, and timber purlins fixed to the steel roof trusses (of simple-framed type) to steady the framework. After the



INTERIOR VIEW OF HANGAR.



HUTMENTS IN COURSE OF ERECTION.

steelwork had been fixed, concrete blocks $28\frac{1}{2}$ in. by 9 in. by 7 in. were laid on the concrete foundations, and brought up to floor level. From this point upwards the walls were built with concrete slabs $28\frac{1}{2}$ in. long, 9 in. high, and 2 3-16 in. thick, the end joints being moulded so as to interlock. The view given above shows the work in progress, and from this it will be seen how the thin slabs were built so as to fit in between the flanges of the stanchions; they were walled in cement mortar.

On the completion of the walling, the exterior was rendered with cement mortar, made weather-proof by the addition of a waterproofing compound. On the inside face of the walls the joints were neatly

pointed, and received no further treatment, except being colour-washed in various agreeable tints.

The windows of the camp buildings are all steel sashes with hopper fanlights. The roofs are of timber covered with felt, and the floors are formed either of T.P.G. boards or of asphalt or corrugated sheeting—all on timber joists.

Although the construction of the buildings is very light, it has proved to be remarkably strong, and has withstood extremely strong gales and bad weather quite satisfactorily.

The buildings comprise quarters for officers and men, including mess-rooms, cook-houses, bath-houses, harness-rooms, sergeants' institute, regimental institute,

company offices, stables and horse shelters, Post Office buildings, stores, latrines, hangars, etc.

With regard to the huts, it is stated that these have cost less than similar huts built of timber, and that the Army authorities have strongly commended them as being in all respects eminently satisfactory.

These huts have many advantages over timber huts, inasmuch as the walls are fire-resisting, requiring no upkeep, and do not deteriorate; moreover, they offer no harbourage for vermin.

The slabs and foundation blocks have all been made with machines supplied to the War Department by Messrs. Winget, Ltd., and the extent of the undertaking may be gathered from the fact that the



HUTMENT COMPLETED.

output of the forty-four machines supplied was equal to the production of 33,000 Winget slabs, 28½ in. by 9 in. by 2 2-16 in. per day.

The consulting engineers for the camp were Messrs. Harper Bros. and Co., Ltd., of London, their engineer-in-charge being Mr. W. B. Waite. The contractors were Messrs. Henry Boot and Sons, Ltd., of Sheffield, and Messrs. Sykes and Son, Ltd., of London. The whole of the cement used was "Pelican" brand, manufactured by Messrs. G. and T. Earle (1902), Ltd., of Hull.

CHARING CROSS BRIDGE.

In support of Sir Aston Webb's protest, in the "Observer" of June 11, several letters from leading architects were printed in the issue for the following week.

Mr. Reginald Blomfield writes: Should this Bill be carried through and the company carry out its proposals, the bridge will be much uglier than it is at present, but this is a small matter compared with the permanent blocking of one of the finest chances of improving London that have been offered since the building of the Embankment. . . . How long are the citizens of London (and it applies to other towns as well) to sit by with folded hands while ineffaceable outrages are perpetrated in their city, and chance after chance goes by of doing something to improve its beauty and introduce order into its incoherence? The day is long past when we could rely on picturesque irregularity for effect. What is very beautiful in a mediæval town is simply absurd in a modern capital. The tendency, fortunately controlled by our Building Act, is constantly to larger buildings and groups of buildings, and the need for a far-reaching and organised control of the architecture of these buildings and of their disposition in streets and open spaces becomes ever more imperative. When Richelieu built his little town near Chinon, early in the seventeenth century, he had it laid out on an admirable plan, and it is to this day a model of its kind. We are three hundred years behind the French. We have absolutely nothing to compare with the

view from the Place du Carrousel to the Place de l'Etoile. Our one street on a proper scale is Portland Place, our one straight street of any length is Oxford Street, with Gower Street a poor second. The tale is familiar and often told, and the moral is always the same: lack of foresight, want of control, the predominance of vested interests over all other considerations. Sir Lionel Earle (Mr. Blomfield continues) in his evidence before the Committee, deplored the absence of any authority to deal with these questions of æsthetics. The dominating power in these matters at present appears to be the railway companies. It is characteristic of our methods that our politicians feel that they have done what is necessary to satisfy the democracy if now and again they institute a public competition for some Government building. There ought to be, as there is in France, a properly constituted authority of experts to advise on these matters. In France the members are selected from the Architectes Diplômés. In this country we have the Royal Academy to draw on for artists in general, and the Royal Institute of British Architects for architects in particular. When we have recovered from the turmoil of this war, the constitution of some such authority must be seriously considered. Meanwhile the Bill might at least be indefinitely suspended.

Professor W. R. Lethaby insists that it matters every way to a great Imperial city that its services should be carried on with, at least, bare decency. It is not a question of "art" or of "beauty"; it is a question of tidiness, efficiency, and order. Those who control such things must give us less to be ashamed of; we must, as citizens, have some pride in our city.

Nearly thirty years ago the late Norman Shaw, on coming back from Paris, spoke to me very hopelessly of London; yet, he said, its possibilities were much the greater in its fine site sloping to the south, and the curve of the great river; St. Paul's, too, was much finer than anything of the sort in Paris. The citizens of London have to be aroused to an ambition to make our city as fine as any in Europe. We need better bridges, more orderly streets, and more reasonable buildings. We are

the victims of words. We call bare common sense "art," and so get rid of it; we call mere necessary buildings "architecture," and put up with make-shifts like Charing Cross Bridge.

Mr. Ernest Newton declares that everybody condemns the bridge. Its owners decry it; members of the Lords Committee would like to abolish it; Mr. Balfour has condemned it in no measured terms; Mr. John Burns calls it scathingly "an oxide Behemoth." Even Nature is against it and tries to destroy it by subtle corrosion.

It rests now with the House of Commons to decide if the railway company is to be given power to bar any possible improvement for at least a generation.

LEGAL.

Builders' Traveller's Claim for Commission

Mullis v. Lamb and Sons.

June 22. Official Referee's Court. Before Mr. Muir Mackenzie.

This action, which occupied the attention of the court for three days, was a claim by Mr. Ernest Dennis Mullis, builders' traveller, against Messrs. W. T. Lamb and Sons, brickmakers and general builders' merchants, of 43, Shoe Lane, E.C., in respect of an alleged breach of agreement by which he claimed to have suffered loss of commission, etc.

The plaintiff said that by an agreement in writing, dated September, 1914, the defendants contracted that he should act as their agent for the sale to builders in various provincial towns of bricks and other building materials. It was agreed that he should receive a salary of £1 a week and commission on all cash payments for orders secured by him. The commission was to be 3 per cent. on the first £12,000 per annum received and 2 per cent.; after £12,000 up to £20,000, 1½ per cent. In addition, as part of his remuneration, he was to be provided with a traders' season ticket up to the value of £60 per annum, which was to include all expenses of travelling. It was further provided that at the expiration of a year the agreement should revert to a three-monthly agreement, terminable on three



VIEW SHOWING RANGE OF HUTMENTS AND OTHER BUILDINGS.

months' notice by either side. Notice was given for the termination of the agreement by the plaintiff in June, 1915. In breach of that agreement, said plaintiff, the defendants had not paid to him certain sums by way of commission due, and in further breach they had omitted to provide him with a season ticket as from July, 1915, in consequence of which he was prevented from covering the ground usually travelled by him, with the result that he was deprived of commission which he would otherwise have earned.

The official referee said that if it were not that the amount of money in dispute was small he would have considered it his duty to have heard evidence on behalf of the defendants, but having arrived at a clear conclusion on the facts of the case as disclosed by the plaintiff's evidence and cross-examination, he felt it to be his duty to express the conclusion at which he had arrived and if possible save the expense of protracted litigation. The first point was whether there had been a breach of agreement on the part of the defendants in not obtaining a traders' season ticket. The undertaking was only to provide a ticket for a year, and for the remainder of the term of his service they had provided him with money to cover his travelling expenses to an amount equal to the cost of a ticket. There had therefore been no breach in that respect. As to the commission, the agreement gave the defendants the right to accept or reject any order received, and the commission was only to be payable upon the cash received. He was unable to find that the non-execution of any of the orders was consequent upon any breach by the defendants of the agreement, and he therefore directed judgment to be entered for the defendants with costs, and that the sum of £20 paid into court be paid out to them. Judgment was entered accordingly.

OBITUARY.

Mr. Ernest Willmott, F.R.I.B.A.

Mr. Ernest Willmott, who has died at the early age of forty-five, at Great Missenden, Bucks, had done much work for religious communities, such as the orphanage of All Saints' Convent, London Colney, near St. Albans, and houses in Margaret Street, St. Marylebone, for the All Saints' Sisterhood. In association with Mr. Herbert Baker, of Cape Town, South Africa, with whom he was in partnership from 1902 to 1906, Mr. Willmott designed the New House, Lympe, for Sir Philip Sassoon, as well as several houses in Johannesburg and Pretoria. Trained in early years for civil engineering, he acquired his knowledge of architecture under Mr. Thomas Garner and with Mr. F. I. Thomas. He was the author of a work on "English House Design."

Mr. Thomas Lumsden.

The death took place at his residence, Danesfield, Jarrow, on June 18, of Mr. Thomas Lumsden, who was a well-known builder and contractor in the north of England. Mr. Lumsden, who was seventy-five years of age, was born at Lowick, Northumberland. In 1868 he commenced business as a contractor in Jarrow, and was immediately successful. The business was gradually developed and extended until Mr. Lumsden was probably regarded as the foremost contractor not only on Tyneside but even much further afield. Amongst many important building contracts which Mr. Lumsden carried out were several churches and colleges.

ROYAL (DICK) VETERINARY COLLEGE, EDINBURGH.

The new buildings of the Royal (Dick) Veterinary College, at Summerhall, Edinburgh, illustrated on the double-page plate in this issue, cover a site having a frontage of 250 ft. and a depth of 280 ft. The main buildings are devoted to teaching and administration, and comprise separate departments for anatomy, chemistry, physiology, pathology, biology, materia medica, medicine, and obstetrics. They are entirely separate from the buildings forming the clinical department, and are so arranged on the ground as to allow a large open courtyard in connection with the latter and a quadrangle to the former. In connection with the various departments there are provided seventeen laboratories and five lecture theatres, with appropriate preparation rooms adjoining, large dissecting room to accommodate sixty-two students, hall for special functions seated for 300 persons, with ante-room, board-room, principal's room, accommodation for the secretary's department, and public waiting-room, etc. Extensive laboratory accommodation has been provided for research into animal diseases, the aim of the authorities being that the institution should not only train students, but should also extend knowledge of the cause and prevention of disease. In the clinical department provision is made for horses, cows, and sheep, and there are five isolation and general wards for cats and dogs, with enclosed "runs" adjoining the latter: two operating theatres for large and small animals respectively, with dressing-room adjoining; post-mortem room, stocks and X-ray apartment, and rooms for teaching pharmacy and giving surgical demonstrations. A bath for horses has been provided, and provision is made for teaching practical shoeing. All the laboratories and lecture theatres are well lit both by vertical lighting and, where possible, by means of properly situated roof lights, provision being made for darkening the latter during daylight by means of blinds controlled from the professors' platform during lantern demonstrations. The cost of site and buildings, including the fittings, was £67,000. Mr. David McArthur, Licentiate R.I.B.A., of Edinburgh, was the architect.

NEWS ITEMS.

Builder's Will.

Mr. John Ash Martin, of 10, West Chapel Street, Mayfair, W., builder and house decorator, left £40,938.

Irish Architects and the Rebuilding of Dublin.

At the weekly meeting of the Council of the Dublin Industrial Development Association a letter was read from the Royal Institute of the Architects of Ireland thanking the Council for their resolution calling for the employment of Irish architects in the designing of the new buildings in Dublin, and the use of Irish labour and material as far as possible.

London in 1975.

Lecturing at the London Society, Mr. Arthur Crow urged the necessity of a development plan for London in which provision should be made for main arterial roads. Unless a proper scheme was adopted London would, in its growth, be strangled. "Assuming," said Mr. Crow, "the population of London to have

increased to twenty millions in the year 1975—about two generations hence—the extent of land required in order to ensure the healthy housing of the people would be 1,040 square miles, allowing thirty persons to the acre over the whole area, including open spaces, streets, manufacturing, and all non-residential areas, or from forty to sixty persons to the acre in the housing and residential districts. An area of this extent would be contained within a circle having a radius of eighteen miles."

An Adam House For Sale.

We are informed that 25, Portland Place is in the hands of Messrs. Knight, Frank and Rutley for disposal, owing to the recent death of Sir James Goodhart. The house was built by the firm of Adam Brothers, for the occupation of Robert Adam, and the decorations, which have been carefully preserved, are highly characteristic.

Waterproofing Cavity Walls.

In hospital construction the authorities are rightly taking every precaution to avoid dampness penetrating the brickwork. In the Small Pox Hospital at Ipswich the cavity walls were grouted with waterproofed cement. We also hear that the new medical offices of health at Ipswich were similarly built with Pudloed cement, and the result in both cases has been most satisfactory.

PRESENTATION OF THE ROYAL GOLD MEDAL.

On Monday week last, Lord Provost Sir Robert Inches attended the general meeting of the Royal Institute of British Architects in London to receive the Royal Gold Medal on behalf of Sir Robert Rowand Anderson. With Sir Robert was Mr. A. Lorne Campbell, a past president of the Edinburgh Association of Architects, who read a statement from Sir Rowand in acknowledgment of the honour conferred upon him by the King on the advice of the Institute. Mr. Ernest Newton, A.R.A., the President, was in the chair, and the company, numbering about sixty, included Mr. Leonard Stokes, past president; Sir John Burnet and Mr. J. A. Gotch, vice-presidents; Sir Henry Tanner, Sir Lionel Earle, and Sir Ernest George.

The President, in making the presentation, reviewed the work of Sir Rowand Anderson, and read out an impressive list of his architectural achievements. He quoted an appreciation of him by one who knew him, to the effect that not only had his work and teaching influenced large numbers of architects now in practice, but that many of the building firms in Scotland owed their capacity for fine craftsmanship and selection of material to his work and guidance. He had been awarded medals in Paris, Munich, and Chicago. Our own country, true to her traditions, was the last instead of the first to mark the appreciation which it had long felt for one of Scotland's most eminent architects.

In handing over the medal to the Lord Provost, the Chairman said: I should like you to tell Sir Rowand that it was awarded to him by the unanimous vote of the Council and of the members of the Royal Institute of British Architects, and that we are proud to have his name on the roll of those who have been honoured by this distinction.

Sir John Burnet proposed, and Mr. J. A. Gotch seconded, a vote of thanks to the Lord Provost.

ELECTRICAL NOTES.

Theatre Lighting.

Electric light being the most elastic form of illuminant, in that it can be applied in almost any manner to comply with structural or artistic conditions or requirements, is nevertheless not always considered an important factor in theatres. This may be due to the fact that the theatre architect has not assimilated a knowledge of the science of illumination, or that pressure is brought to bear on him by a "philistine" lessee or owner, or that the choice of fittings is sub-let to a wiring contractor. One has not got to go far in London in order to find "glaring" examples of bad taste and inefficiency of electric lighting in theatre auditoriums.

The Criterion Theatre at Sydney, N.S.W., which has been lighted by the British General Electric Co., Ltd., is a notable exception in the right direction, and it is now claimed that the lighting scheme has made the theatre the best lighted one in Australia. The auditorium has been almost entirely lighted with ceiling fittings, which do not obtrude into the line of vision, and the use of "Equiluxo" glassware has contributed to a soft and even distribution of light. There are in all 174 of these ceiling fittings, 110 having 8-in. hemispheres and 64 having 12-in. hemispheres. These are used for throwing into relief the general lines of the dome and for the ceiling over the back part of the stalls, where they are placed in the centres of the ceiling panels. Similar fittings are used for the lower portions of the dress circle, but at the back, where the ceiling is higher, semi-indirect fittings suspended by chains are used, and smaller fittings of similar design are employed in the boxes. All these fittings in the auditorium are of oxidised silver, with Osram Atmos type lamps. The vestibule fittings are composed of one central and several subsidiary lights, each being in an "Equiluxo" urn of Doric design, with metal work of Grecian bronze. The dress circle landing is lighted by a gilt colour brass pendant surrounded by six lights, in "Superlux" glassware, and similar glassware is employed in certain other positions.

Corrosion-proof Fittings.

A special form of lampholder has been added to the series of corrosion-proof fittings introduced by the St. Helens Cable and Rubber Co., Ltd., of Warrington, for use with their C.T.S. wires, for positions where it is not desirable to use one of their ceiling roses. The design is on the same lines as the makers' standard corrosion-proof lampholder, and is fitted with a "U" seal in the top and a special collar with cushion to protect the terminals and lamp cap. Hence, the holder protects the cable ends and terminals from corrosion, as well as the whole of the lamp cap. This new type holder is made of ebonite, and comprises an interior having a bayonet cap lamp socket with spring plungers provided with solid terminals at the top for the attachment of C.T.S. flexible conductors. This interior is contained in a barrel, a special form of hollow cup being screwed into the upper end, whilst the lower end is fitted with a screwed gland carrying a shade ring and being adjustable so as to fit closely over the shoulder of the lamp.

The cap of the holder is provided with four holes to take looping-in conductors, so that a ceiling rose can be dispensed with. The conductors, after passing downwards through these holes to the bottom of the cap, are turned upwards and connected to the terminals of the interior. After the cap has been screwed into position, a small screw plug is removed from the top and a fluid sealing compound is poured in. These fittings are, it is stated by its vendors, approved by the Home Office for use in explosives factories and other dangerous places. They have been subjected to very severe tests, including, with lamps burning for continuous periods of 144 hours under water and for twenty-four hours under battery acid.

Professor Silvanus P. Thompson.

The nation in general, and electrical students in particular, have suffered a great loss by the death of this scientist, late Principal of Finsbury Technical College. Unlike other professors of science, he had the gift of lucid exposition in his lectures, and of being able to explain the theories he enunciated by practical application. His reputation in this connection was so great that many students of other colleges used to attend his lectures in the evening to supplement the teaching they had assimilated, or failed to assimilate elsewhere. In addition to lecturing, he was an inventor and author, and at times he acted as consultant. His knowledge of languages and the historical evolution of science was profound, and whatever attainments he practised he was always interesting. As an author he is best known by his "Dynamo-Electric Machinery," "Elementary Lessons in Electricity and Magnetism," his "Michael Faraday," and the "Life of Lord Kelvin." He was connected with many scientific societies, who will deplore his loss equally with his many students and old friends.



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BUILDING.

No Date.—**SETTING BOILER.** Mow Cop (Stoke-on-Trent).—Setting a boiler. Particulars from Manager, Newbold Colliery, Mow Cop.

PAINTING.

June 28.—**PAINTING, ETC.** Beverley.—Painting and cleaning of various schools, for the East Riding Education Authority. A list of the schools intended to be painted or cleaned may be obtained on application to J. Bickersteth, Clerk to the East Riding Education Authority, County Hall, Beverly. Specifications of the work may be seen and forms of tender obtained at each of the schools mentioned on the list.

June 28.—**PAINTING.** Edinburgh.—Painter work at George Heriot's School, Heriot-Watt College, and the trust offices, for the George Heriot's Trust. Particulars from J. Anderson, Superintendent of Works, 20, York Place, Edinburgh.

June 29.—**PAINTING.** Idle.—Painting inside and outside of the P.M. church and schools, Idle. Particulars from J. A. Munton, Baston, Idle, Bradford.

June 30.—**REPAINTING.** Barrow-in-Furness.—Repainting the iron and steel work of the Walney Bridge, for the Corporation. Particulars from the Borough Engineer, Barrow-in-Furness.

July 1.—**PAINTING.** Kirkcaldy.—Outside and inside painting of greenhouses and cold frames at the Beveridge public park, for the Town Council. Particulars from the Burgh Surveyor's Office, 10, Tolbooth Street, Kirkcaldy.

July 5.—**PAINTING.** Cambridge.—Painting exterior of the infectious diseases hospital, Mill Road, and twelve cottages in Stanley Road, for the Corporation. Particulars from the Borough Surveyor, Guildhall, Cambridge.

July 10.—**PAINTING.** Mold.—External painting of all their Council schools, forty in number, during the summer months, for the Flintshire Education Committee. Particulars from S. Evans, County Offices, Mold, Flintshire.

ROADS & CARTAGE.

June 27.—**PAVING BLOCKS, ETC.** Tottenham.—Supply of wood paving

blocks and tar and asphalt paving repairs, for the Urban District Council. Particulars from the Acting Engineer, Town Hall, Tottenham.

June 30.—**MATERIALS.** Merthyr Tydfil.—Supply of the following, for the Corporation: limestone macadam, gravel, and chippings; granite or basalt macadam and chippings; tar-macadam and chippings. Particulars from the Borough Surveyor, Town Hall, Merthyr Tydfil.

MISCELLANEOUS.

June 30.—**PAINTS AND OILS, ETC.** Powick.—Supply of paints and oils, etc., for the Committee of Visitors of Worcester County and City Asylum, Powick. Particulars from the Storekeeper.

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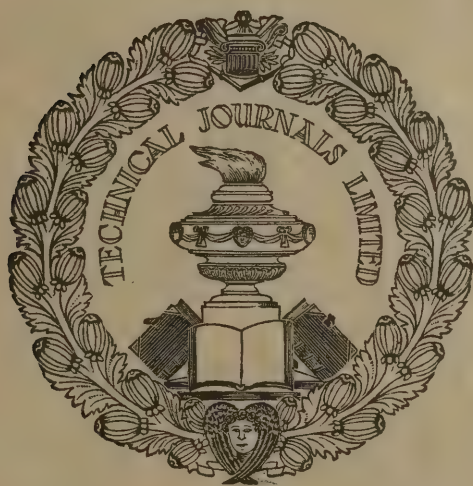
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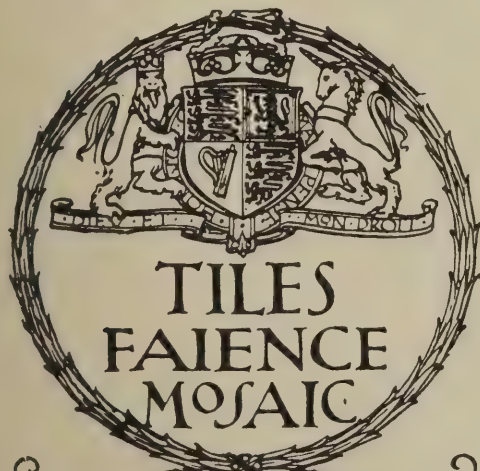
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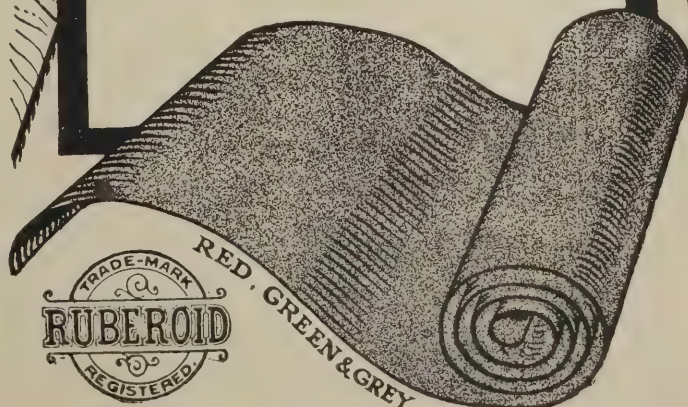
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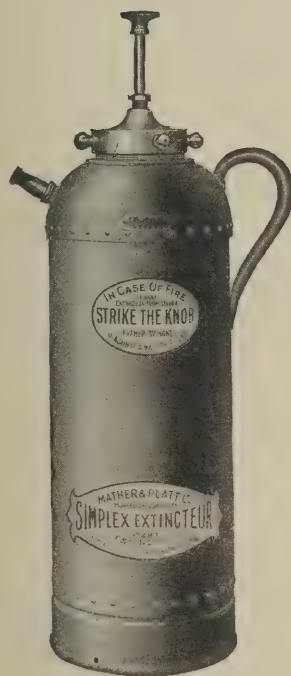
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BUILDING.

June 28.—**RENOVATION WORKS. Bedford.**—Renovation works (chiefly external painting and repairs, etc.) at the various Council schools, for the Education Committee. Particulars from R. Kitching Ellison, Surveyor of School Buildings, Shire Hall, Bedford.

June 28.—**TAR-PAINTING. Bedford.**—Tar-painting and repairing to the playgrounds of certain Council schools, for the County Council (Education Committee). Particulars from R. K. Ellison, Surveyor of School Buildings, Shire Hall, Bedford.

June 28.—**SLAUGHTER HALL. Rochester.**—Erection of a slaughter hall, cooling room, lairage, and pens, etc., on the Common, Rochester, for Payne and Co. Particulars from C. W. Thompson, A.R.I.B.A., P.A.S.I., Bank Chambers, Rochester.

June 28.—**JOINERY. Plymouth.**—Joinery and other work at their workhouse, for the Board of Guardians. Particulars from W. H. Davy, Clerk to the Guardians, the Workhouse, Greenbank Road, Plymouth.

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June 29.—**REPAIRS, ETC. London, W.**—Sundry decorative works and repairs at their infirmary, Marloes Road, Kensington, for the Kensington Board of Guardians. Particulars from W. R. Stephens, Clerk, Guardians' Offices, Marloes Road, Kensington, W.

June 29.—**REPAIRS. Sunderland.**—Making good considerable damage at the Wheat Sheaf car depot, for the Corporation. Particulars from the General Manager, Tramway Offices, Monkwearmouth.

June 30.—**REPAIRS, ETC. Cannock.**—Repairs to and painting the interior and exterior of the Council offices and other buildings, for the Urban District Council. Particulars from R. Blanchard, Engineer and Surveyor, Council Offices, Cannock.

June 30.—**SLATER AND PLASTER WORK. Skene.**—Mason, joiner, slater, and plaster work at Auchincleach Farm, Skene. Particulars from the Farm.

June 30.—**BRIDGE. Headcorn (Kent).**—Taking down and rebuilding Frank's Bridge, for the Kent County Council. Particulars from County Surveyor's Office, St. Peter Street, Maidstone. Deposit £2 2s.

July 7.—**ALTERATIONS, ETC. Trowbridge.**—Alterations, additions, repairs, and renovations, etc., at the following

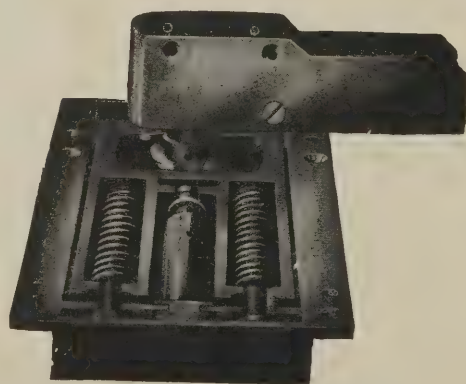
Council schools during the summer vacation, 1916, in accordance with plans and specifications prepared by the County Surveyor, for the General Education Committee of the Wilts County Council: Atworth, Bromham, Bremhill, Easington, Tytherton, Brinkworth, Chippenham, Iwerley, Lane, Chippenham Westmead mixed and infants', Corsham Pickwick, Corsham Methuen, Corsham Neston, Corsham boys' and infants', Downton, Dilton Marsh, Donhead St. Mary, Donhead Ludwell, Edington and East Coulston, Great Cheverill, Highworth mixed and infants', Idmiston, Luckington, Milton Lilbourne, Melksham Lowbourne, Pewsey mixed and infants', Purton, Rodbourne Cheney, Rodbourne Cheney Haydon, Ramsbury, Ramsbury Axford, Stratton St. Margaret, Upper and Lower Stratton boys' and girls' and infants', Shalbourne Oxenwood, Trowbridge Newtown, Trowbridge Adcroft boys' and girls', and Margaret Stancomb, Wanborough, Wroughton girls' and infants', Wootton Bassett, Westwood-with-Ilford, West Dean, and Warminster Close Council Schools. Particulars from J. G. Powell, County Surveyor, Trowbridge, on and after June 19.

July 8.—**BRIDGE. Kilkenny.**—Building of a bridge in reinforced concrete over the river Barrow at Ferry Mountgarrett, together with accessory works, for the Counties of Kilkenny and Wexford. Particulars from Delap and Waller, 115, Grafton Street, Dublin. Deposit £20.

July 10.—**ALTERATIONS, ETC. Cavan.**—Extensive alterations and additions to James Fay's drapery premises in Main Street, Cavan, for Peter Soden. Particulars from P. J. Brady, Architect, Broomfield, Ballyhaise.

Contracts continued on page viii.

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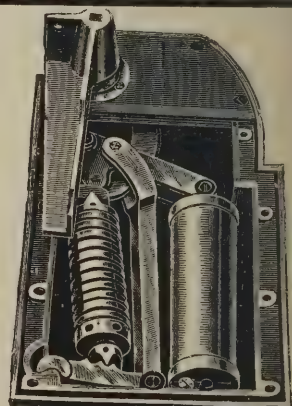
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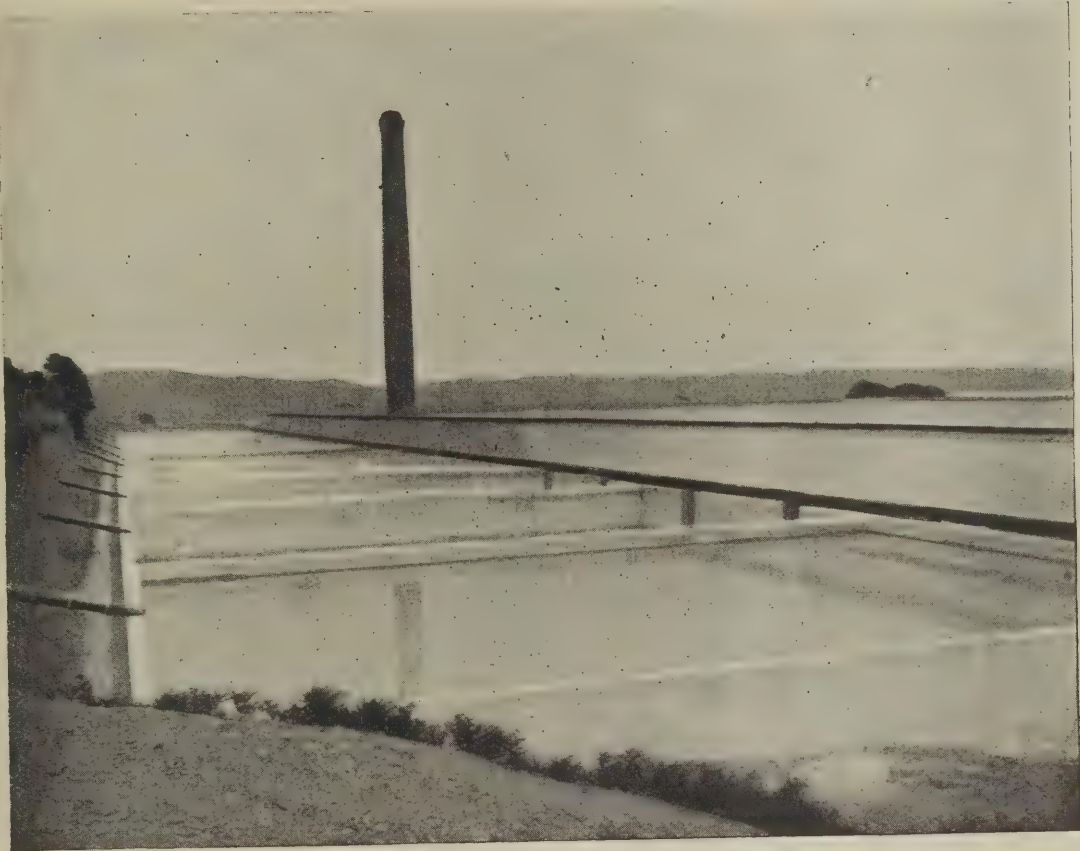
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July 12.—**DOORS. Gainsborough.**—Erection of a pair of new doors for the outlet of Walkeringham drainage on Trent Bank. Particulars from Thomas Horberry, Surveyor of Drainage, Walkeringham, Gainsborough.

No Date.—**DWELLINGS. Bristol.**—Erection of workmen's dwellings and laying sewers at Bryant's Hill, St. George, for the Trustees of the Furber Fund. Particulars from W. H. Watkins, F.R.I.B.A., Architect, 15, Clare Street, Bristol.

ENGINEERING.

June 30.—**HEATING PLANT. Shanghai.**—Installation of a heating plant in the new central offices, for the Shanghai Municipal Council. Particulars from Messrs. John Pook and Co., 68, Fenchurch Street, London, E.C. Deposit £10.

July 3.—**CONDUIT. Southampton.**—Constructing a conduit for electric mains, Town Quay, Southampton, for the Southampton Harbour Board. Particulars from Board's Engineer, Harbour Offices, Town Quay. Deposit £1.

July 10.—**BOILERS, ETC. London, W.C.**—Manufacture and erection of two Lancashire boilers, together with economiser, superheaters, piping, feed pump, and other contingent work, at the Shortlands pumping station, Valley Road, Shortlands, Kent, for the Metropolitan Water Board. Particulars from the Offices of the Board, Savoy Court, Strand, W.C. (Engineer's Department). Deposit £1 1s.

July 10.—**REFUSE DESTRUCTOR. Harwich.**—Design and construction of a refuse destructor, for the Corporation. Particulars from F. H. French, Borough Surveyor, Harwich. Deposit £1 1s.

August 16.—**DISTILLING APPARATUS. London, S.W.**—Supply to the Postmaster-General's Department, State of Western Australia, of (a) distilling apparatus to schedule No. 502, and (b) instruments, telegraph and measuring, various and parts, to schedule No. 498. Particulars from Commonwealth Offices, London.

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July 3.—**DRAINS. Doncaster.**—Laying of surface-water drains near the Woodlands. Particulars from R. E. Ford, Acting Borough Surveyor, Mansion House, Doncaster.

IRON AND STEEL.

June 29.—**PIPES, ETC. Saragossa (Spain).**—Supply of cast-iron pipes and accessories for the water-distributing system of the city, for the Municipality. Particulars from the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, London, E.C.

July 1.—**IRONMONGERY, ETC. Paddington.**—Supply of hardware and ironmongery, for the Board of Guardians. Particulars from S. J. Langford, No. 313, Harrow Road, Paddington, W.

No Date.—**WIRE FENCING. Fort William (Scotland).**—Erection and repair of about three miles of deer fences on Ardour estate. Particulars from Allison and MacLachlan, Ardour Estate Office, Fort William.

PAINTING.

June 28.—**PAINTING, ETC. Huddersfield.**—Painting, colouring, etc., various

schools within the borough, for the Corporation. Particulars from K. F. Campbell, M.I.C.E., Borough Engineer and Surveyor, 1, Peel Street, Huddersfield.

June 28.—**PAINTING, ETC. Bradford.**—Painting and French polishing shop fronts at Kirkgate and Rawson Place Markets, for the Corporation. Particulars from City Architect, Town Hall, Bradford.

July 3.—**PAINTING. Southampton.**—Painting warehouses and cranes, Town Quay, Southampton, for the Harbour Board. Particulars from the Board's Engineer, Harbour Offices, Town Quay, Southampton. Deposit £1.

Late Contracts continued on page xvi.

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Telegraphic Address: "Buildable, Vic., London."

Telephone: ADVERTISEMENT, EDITORIAL, COUNTING HOUSE, AND PUBLISHING—6936 Victoria (2 lines).

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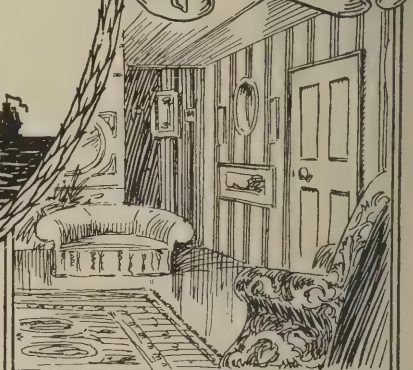
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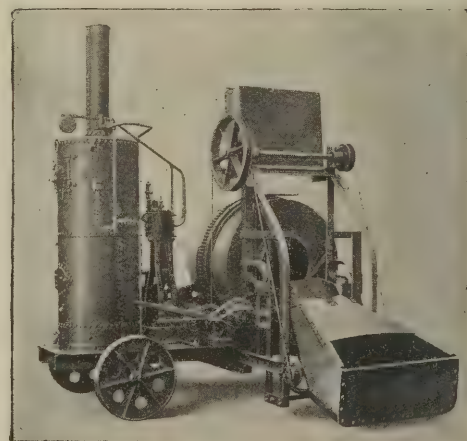
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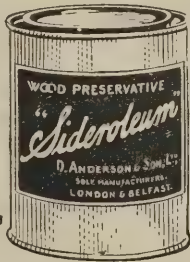
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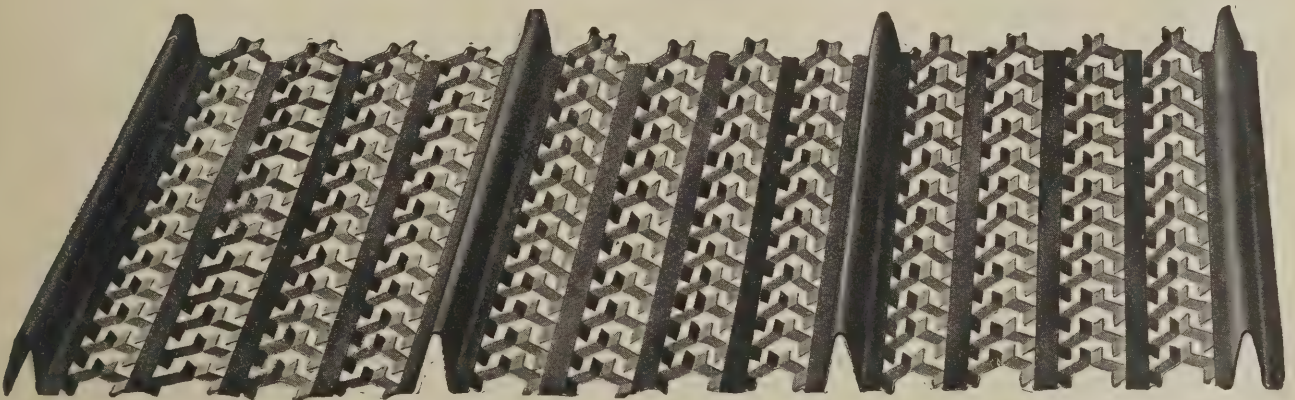
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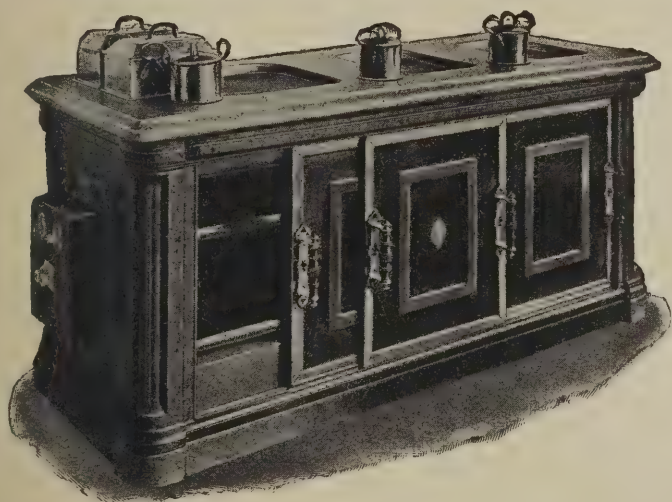
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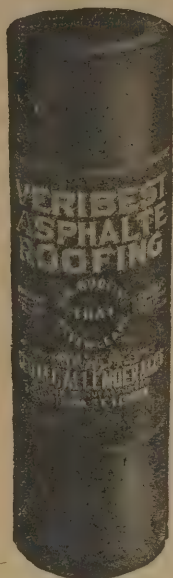
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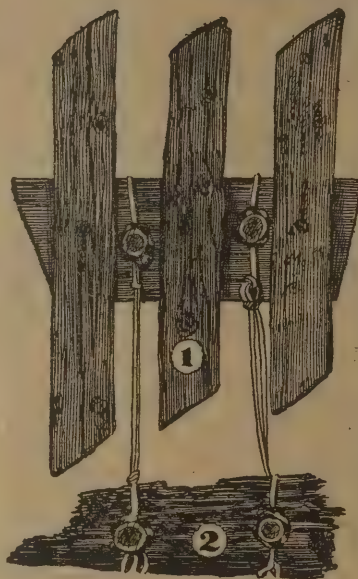


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